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PHONEMES AND ORTHOGRAPHY

**Language planning in ten minority
languages of Thailand**

William A. Smalley, editor



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To

*His Majesty, the King of Thailand,
who sets the example of humane
concern for minority peoples,*

and to

*all Thai officials of whatsoever level
and in whatsoever capacity who are
seeking to formulate and implement a
wise policy of administration and
education for the country's linguistic
minorities,*

and to

the minority peoples themselves...

this book is dedicated.

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INTRODUCTION

This volume consists of articles on the sound systems of ten of Thailand's minority languages,¹ each with a description of the way in which the language is being written or might be written in Thai script for the development of literacy among the people, using their language. These articles are preceded by two general ones: one on the history of writing systems related to such languages in the area, and various policies applied to their preparation, and the other on the problems and principles of preparing writing systems for previously unwritten languages. As such, the volume is a contribution both in its recording of linguistic analyses of the sound systems of some little-known languages, and as a contribution to our understanding of the process of developing writing systems, a part of the larger concerns of language planning.

The articles are relatively technical. In those parts where they are describing the sound systems they assume some knowledge of descriptive phonology (a branch of linguistics) as currently practised by some linguists. They also assume some knowledge of the Thai system of writing when they are discussing orthography. However, in most chapters the phonological and orthographic sections are separated, so that the phonological information will be available to linguists who do not know the Thai orthography, and the conclusions about orthography will be available in some degree to educators, administrators, and others who may not be familiar with the particular jargon and notations of linguistics.² All of the authors stand ready to interpret their suggestions about writing the respective languages to any Thai educators or administrators who might be interested.

¹The term "minority language" is defined in the first article.

²The Appendixes to this volume may provide help for some readers trying to follow the discussion.

Language planning is an ancient activity, as governments, educational authorities, special academia, and influential individuals in one country or another have tried to change or develop language usage. And beginning with the ancient alphabets, the preparation of writing systems has been a major critical undertaking at stages in the history of different languages. King Ramkamhaeng and the Thai alphabet is an important case in point, as are the modifications which have taken place in Thai writing since. In modern times, also, with the development of new national states, many of which are Babels within their borders, the question of language planning has become critical in international thinking. This coincides with the modern concern for the value of all peoples, no matter how low their present economic or political place in today's power systems. And at the same time, there has come the broadening of modern linguistics to include the study of the uses of language in society, and to make a contribution to language planning.¹

Christian missionaries have long been at the forefront of those who have planned new writing systems for hitherto unwritten languages, as have the advance agents of some other religions as well. And if the stereotype of the missionary as one who thought too little of the values of the culture in which he was working was all too often partially true, it should not obscure the fact that he was as often deeply concerned with sharing the values which were important to him. Of major importance among these was his ability to read and write, and the enrichment he felt in his life because of the mastery of this skill. Missionaries were therefore among the first to seize upon the developing insights and techniques of modern linguistics and to adapt them to the planning of writing systems. Many detailed and insightful linguistic descriptions of little-known languages have been a byproduct of this effort (Wonderly and Nida 1963). This book, in its modest way, tries to carry on this tradition, as it describes different examples of a little-studied and sometimes rather difficult problem, the adaptation of the intricate Thai writing system to some of the diverse sound systems characteristic of languages used within Thailand.

The authors of the studies in this book, working in their little corners, are not official people in any way. They have used their specialised knowledge - their many years of speaking these little-known languages, and in some cases their professional linguistic skills - to meet a need which they saw. Like so many before them, they want to share the enrichment of being able to read and write in one's own

¹Tauli 1968; Rubin and Jernudd (eds) 1971, especially pp. 311-23, which is an annotated bibliography of "Some Introductory References Pertaining to Language Planning".

language. This book is a way of explaining what they have been doing, so that linguists, academic language planners, and officials who have the power to do language planning on a broad scale may have access to their years of study and experimentation.

The authors of this book are not all professional linguists, but all of them are (or have been) missionaries who work among minority peoples. All are very much concerned about educational opportunities for these minority groups, about economic security for them, and about their general movement into the perilous larger world, concerned that they be able to respond culturally, linguistically, and emotionally to some of the dangers of the changes they must undergo.

At the heart of this concern is the conviction that in this modern world the minority peoples need to be literate, and that because such large percentages of them do not know Thai well, they need literacy and a modest amount of literature in their own languages. The writers of these articles are convinced also that writing systems for these people living in Thailand should be based on Thai, and that learning to read their own languages in Thai script will help to provide a bridge to the Thai language and to the Thai education which they need for a window to the outside world, if not for a toe-hold in that world.

Several of the authors in this volume have studied linguistics on various levels. J. Edwin Hudspeth, Beulah M. Johnston, James A. Morris, David W. Hogan and Peter Wyss have studied at one of the branches of the Summer Institute of Linguistics; C.W. and Lois Callaway have also studied toward the M.A. in linguistics at the University of Indiana, where David Filbeck earned a Ph.D. Joseph R. Cooke has a Ph.D. in linguistics from the University of California, although his work on Phlong (Pwo Karen) was done earlier. E.R. Hope earned his Ph.D. from the National University in Australia. I have a Ph.D. in anthropological linguistics from Columbia University (Smalley 1961) and have been a linguistic and translation consultant working with the Bible Societies in Southeast Asia. It has been my responsibility to give linguistic guidance to missionaries and others who translate the Bible into any languages of this area. I have long had an interest in the development of new writing systems, as may be seen in another book of edited orthography studies (Smalley *et al.* 1963) where some of the problems treated in the present book were discussed in a preliminary way.

The authors who do not have such formal training in linguistics are nevertheless familiar with the basic linguistic concepts. They have profited by various conferences and institutes held on these problems, and from discussions with colleagues.

Most of the authors are long-time residents of Thailand and have

spoken the languages about which they write for many years. My own two papers on Northern Khmer and Hmong are exceptions to the latter qualification, but in both cases I worked with missionaries who did fill the criterion. The authors did not do the study represented here as "research", but went about learning the respective languages in the line of their duties. The information which they have accumulated would be lost to the scholarly world and to the Thai nation if it were not recorded in such form as this.

As editor of this volume I have tried to see that the phonological material in each article is presented in such a manner as would be useful to linguists. I have often therefore helped the authors to structure their information, and have rewritten some sections. No great theoretical points are being made, and none should be expected. These are data papers in which the authors are more concerned about the orthographic implications of their work than about the theoretical ones. As information about little-known languages, the data are of value in their own right. A variety of interpretations may be possible on some points, but that is generally beyond the purpose of the writers. Some of the articles are much more detailed than others, but all present the essentials of those aspects of the sound system which are relevant for popular writing systems. There is a chapter on each of the Thai-based writing systems in use in the country as of the time of preparation of this volume.

In recent years the Thai government, in various agencies, has been showing increasing interest in a programme for the education of the minority peoples.¹ Whatever the final policy of the Thai toward the minorities may be, the authors of this volume hope that the efforts represented here may contribute to the well-being of these groups, and may ultimately help to bring them the benefits and responsibilities of greater knowledge and advancement. We hope that whether or not the Thai government eventually includes any of the minority languages in a system

¹"...the stipulation of a script to be used in printing books for tribal teaching programs have not yet been decided upon, according to a top-ranked source in the Ministry of Education.

"Several missionary groups, both Protestant and Catholic, have been working with tribal groups, the educator pointed out, and a number of different alphabet systems have been devised for teaching.

"A decision on the alphabet is particularly pressing, the official said, because of the confusion bound to result as programs now underway progress and require changes in the future.

"Indicating the Government appreciated the missionary efforts, the official pointed out that if reading materials were not provided that met the needs of the Government then communist literature would be introduced, to the detriment of government efforts." (*Bangkok Post*, April 16, 1973)

of bilingual education in the schools, our efforts to write the minority languages in Thai script will make it easier for the people to learn Thai and to get an education in Thai as their most accessible window to the larger world. We also hope that these modest contributions to the knowledge of the sound systems of the minority languages will be of use to Thai scholars, to the administrators of enlightened and humanitarian programmes among the minority peoples, as well as to linguists at large.

I would like to express my appreciation to the people who have made this volume possible, especially, of course to the authors who wrote the chapters of Part 2. Several of them read and commented on an earlier draft of other chapters than their own, as did Norm Mundhenk, Herbert C. Purnell, Jr, and Theodore Stern. Typing at various stages was done by Umphorn Suteeca, Jane A. Smalley and Leigh R. Kambhu. Tape recording equipment used in the research underlying Chapters 3 and 4 was provided under a grant from the Wenner-Gren Foundation. The American Bible Society (and later the United Bible Societies) provided the auspices under which I wrote and edited.

Earlier drafts of much of the material in this volume were ready in 1967, but publication was delayed by pressures on me. Much of the material has been rewritten for the present publication, and where that has not been necessary it has been updated wherever possible.

Except for the very last stages of the editorial process, the manuscript for this book was completed before the change in Thai government in October, 1973. It is too early to know what changes may occur in policies toward minority peoples in Thailand under a new regime, and all references to Thai government policy should be understood in light of that fact.

William A. Smalley
December, 1973

PART ONE

CHAPTER ONE

WRITING SYSTEMS IN THAILAND'S MARGINAL LANGUAGES: HISTORY AND POLICY

WILLIAM A. SMALLEY

Distributed around Thailand's borders and in several other areas of the country are minority peoples¹ speaking a variety of languages. Some of the minority language groups are the noted "hill tribes"² of Northern Thailand, like the Hmong (Meo),³ Paganyaw and Phlong (Karen),

¹For a general survey and summary of information on the peoples of this area see LeBar *et al.* 1964. See also Young 1966; Seidenfaden 1958; Boon Chuey 1963b.

²There has been considerable criticism of the term "hill tribe" as applied to peoples in Southeast Asia. They are not "tribes" in any meaningful sense, and some do not live in the hills. We use the term for lack of something better (cf. Keyes 1968:53a [footnote]).

³It is our policy in this volume to use the name by which speakers of a language distinguish it or themselves, if we know it. There are, of course, many well-known problems in doing this, and it is sometimes necessary to modify these terms as with "Northern" Khmer. However, we follow the principle as strictly as possible for the languages of Thailand. We are not always sufficiently informed of what speakers of languages elsewhere call themselves.

In order not to lose readers familiar with the area, we also identify the names by which the groups are more frequently called, placing these in parentheses, when necessary, after the people's own name.

The names we use are frequently normalised to make them more "readable" for English-speaking people. Hmong, for example, is more likely to be read as something approximating the way these people refer to themselves than is /hmoob/ (Chapter 4). The spellings of these names are therefore not necessarily consistent from one language to another. For example, the <ü> in <Lavüa'> and the <y> in <Myang> represent approximately the same sound [+]. The spelling Myang is already in use by some writers, following the Haas system for transcribing Standard Thai (Haas 1964). However, to use /y/ in <Lavya'> would tend to be read as sounding like love ya, which would not be particularly helpful.

Lahu, etc. Others are plains people in the Northeast, such as the Kuy and the people who speak Northern Khmer¹ there. Still others are to be found in the South, like the Negritos,² the Urak Lawoi' (Orang Laut), and the Malay-speaking people (Fraser 1960). And in all Thai cities and towns there are the populations which speak various Chinese and Indian languages.

Many of these minority groups are people with preliterate cultures. In such cases this usually means that a child can be born and grow up, an adult can live and die, without a strong need to read and write. He can live a normal existence within his own community without a feeling that he is in any way culturally deprived by lack of ability to communicate through marks made on paper. Life as he knows it does not include reading and writing as a major component.

To say this, however, is not to say that there is no writing at all among minority language people, even leaving aside the obvious cases of Chinese and Indian languages. There are increasing numbers of hill tribes individuals, people here and there, who can read and write the Thai language and who use it primarily in contacts with Thai. Hundreds of Northern Khmer speakers have this skill.

In Mien (Yao) there are song and ritual languages or dialects which are written in Chinese characters and read by literate specialists. These occupy a central place in Mien culture. Purnell reports five thousand pages of such text photographed or copied by Cushman and himself in six locations during a year's research. This was only a small sampling of the text available (Purnell 1972a).

There are also individuals in some groups, notably the Mien (Yao), who can read and write Chinese as such. Chinese writing may be read off in Mien language, literally substituting Mien words for the Chinese, or more often in one or another of the Chinese languages (Cantonese, Yunnanese, etc.). If a Mien receives an ordinary letter written in Chinese characters he is likely to read it off in Yunnanese (as modified by the Mien), or he may read it directly into Mien, or he may use a mixture of the two (C.W. Callaway p.c.).

There is a very small number of minority language individuals in Thailand who read and write English due to some unusual opportunity in education, such as the fact that they came to Thailand from Burma where

¹I use the term "Northern Khmer" for the form of Khmer spoken in Northeast Thailand along the Cambodian border. This special term is required because the language there differs widely from Standard Khmer (Chapter 3).

²Brandt 1961:123-60, 1965:27-43. I do not know the name by which they distinguish themselves.

they had English schooling. There are a few individuals, also, who read and write Burmese, or Lao (as written in Laos).

Some of the minority languages are partial exceptions to this description also in the sense that they are the fringe of a language which has a literary tradition and education in a neighbouring country. Thus, the Tay Yay (Shan) in Thailand are largely illiterate except where they have learned to read and write Thai, but Tay Yay has a long written tradition in Burma and a few of the older men can read it. The large Northern Khmer-speaking population in Thailand is not able (except in very rare instances) to read the Khmer language in the country to the south of them. Malay writing, however, particularly in its Arabic form, is known to a significant degree by educated Malays in the South.¹

Then, of course, there are communities of minority language peoples who are distant outposts of widespread literate peoples in India and China. A significant percentage of such people read and write their own language, and this book is not concerned with them at all.

Writing systems for the minority languages

Some small numbers of minority language people read and write in systems which have been specifically developed for them. Such writing systems range from long established ones like that of the Paganyaw (Sgaw Karen) system developed in Burma over one hundred years ago and read by some three thousand people in Thailand, to highly experimental ones developed recently and reported in this book. Our purpose in this chapter will be to show where the various types of writing systems come from, how much they have been used, and what place they now play in the life of people.

This discussion will be limited to the work which may be construed as language planning, and which is or has been promoted through reading programmes and the publication of literature. Its purpose is to provide the background for the descriptive articles which follow. This means that we must regretfully exclude cases where individual members of hill tribes cultures, educated in one language or another, may have written the hill tribes language impressionistically in the letters of the more widespread language they have learned. Such writing has been for limited use, and there is no systematic effort to spread it. Excluded also are the efforts of professional linguists and anthropologists

¹Note that Lao does not come within our category of minority languages in Thailand. There are more Isan (Lao) speakers in Thailand than there are in Laos. It is one of Thailand's regional languages, a problem of an entirely different category (Smalley forthcoming).

who have written hill tribes languages for purposes of scientific analysis, or who may have suggested writing systems for the practical use of the hill tribes people, as these are not being followed up nor spreading among the people. The efforts of other individuals highly interested in the hill tribes, who have written down word lists or other language information from the hill tribes language in one or another writing system of their own devising and adaptation, are also not included,¹ nor are the non-missionary scripts used by pockets of Karen (Stern 1968; Marin 1943). This background chapter, furthermore, will not usually describe the situation in those languages which have chapters devoted to them later on.

Burmese-based script: Paganyaw

In order to understand the full ramifications involved in the writing systems used for hill tribe languages in Northern Thailand, we need to begin by looking elsewhere. About 1830, for example, a missionary named Jonathan Wade prepared a writing system for Paganyaw (Sgaw Karen) in Burma. It was based on Burmese characters modified to accommodate tones which did not match Burmese tones. What it looked like may be seen in Sample 1.² In 1843 the whole New Testament (a book of several hundred pages) was printed in that system, followed by the Old Testament (an even longer book) in 1853. This means that a publication of enormous proportions had been undertaken more than 100 years ago.

ဒီးမုာ်နံတေဉ်ပူၤကွံာ်ဒီးယုာ်ရှုးလဲၤန့ၣ်ကဒီးဆူကပုး
ရနီၣ်အပူၤ, ဒီးပုၤနံၤ ဟူၤလၢအအိၣ်လၢ ဟံၣ်ပူၤလီၤ-
ဒီးပုၤအိၣ်ဖျိၣ်ရဲဖျိၣ်တကီၢ်ခါအါဂၤ, တုၤအလီၢ်တအိၣ်
လၢဘၣ်, လၢကျဲၤစၢၤ ထံးဒၣ်လဲၣ်န့ၣ်တအိၣ်လၢဘၣ်
လီၤဒီးစံၣ်တၢ်တဲလီၤအီၤလၢတၢ်အကလုာ်ကထီၤလီၤ.

Sample 1. Paganyaw (Sgaw Karen) in modified Burmese script

It was followed by many other books. That Paganyaw writing system has gained widespread use among the Paganyaw in Burma and is in use in

¹The *Journal of the Siam Society* has published word lists prepared under these conditions at various times. See, for example, the interesting comparative lists by Kraisri 1963:183ff. See also Smalley 1963:189-201.

²Much of the information presented here, and most of the samples of script, are taken from North (ed.) 1938. See also Nida (ed.) 1972. Other samples were taken directly from Bibles or Bible portions published by the British and Foreign Bible Society (London), or by the Bible Society in Thailand and Laos (Bangkok). See also Diringer 1953:184-5.

Thailand today. It was suitable for the Moulmein dialect in Burma, and although it does not exactly fit the sound system of the Thailand dialect it is usable here as well. In addition to the Christian Bible, and literature written in Burma, some literature has been written or translated in Thailand, including a translation of the New Testament made especially for Thailand Paganyaw. A mimeographed set of language lessons for learning Paganyaw has been prepared and is used by missionaries, anthropologists, and others working among Paganyaw people.

In addition to this traditional writing system, a second, Roman script for Paganyaw was separately prepared by Father Joseph Séguinotte in 1954, adapted from another script used in Burma (Sample 2). It has been taught in schools and to some adults. A hymn book and book of prayers, a Gospel of Mark and other parts of the Bible have been published in it. Father Séguinotte has prepared a dictionary of some 300 pages in this script as well.

21 Su naj hoo taj civ pax leplez tai wai le : «Su t'maz si pgaz k'nyau t'geiz ! pgaz le av maz si pgaz k'nyau neif, k'baf taj cif nyauf auz lauz.» 22 Mei mej yai daf iz, y'tai baf su le : «Pgaz le av sav htauf av daupuj waij neif, k'baf taj cif nyauf auz; pgaz le av civ ngau av daupuj waij neif, k'baf taj laiz se auz soo pgaz soof kei sav pgaj t'hpaf av of dauv pgaz le av civ pluj av daupuj waij neif, k'baf taj cif nyauf auz le l'rax meif oo neif lauz.

Sample 2. Paganyaw (Sgaw Karen) in Roman script

The Paganyaw have the largest literate group of hill tribes people in Thailand, with an estimated three thousand readers in the Burmese-based script and two thousand more in the Western script. The number in both is growing. A few of those who read the Burmese-based script came over into Thailand as refugees from Burma, but most of them learned to read in Thailand through the influence of the Christian church. The writing systems and the literature available in them are very important to the Christians, who are quite numerous among the Paganyaw people. Some others who are not Christians are able to read and write as well.

The fact of two writing systems for the same language in the same country is, it seems to me, very unfortunate. It arises from lack of coordination between missions, from the differences between Paganyaw in Burma and in Thailand, and from resistance to the relative difficulty of teaching the Burmese system as against the Western. So long as two churches are working each in its own corner there does not seem to be

No Thai-based orthography has been worked out for Paganyaw. There is no technical reason why it could not be. However, Paganyaw readers exist in sufficient numbers so that they feel that their present systems are their own. Each feels that the one he uses represents the language as no other system could. From a linguistic point of view this is not so, but from the standpoint of emotional identification with a familiar system it seems so to them. The prospect of a change, of using any other system, seems to some of them to be a violation of their very cultural heritage, and could create resentment against those language planners who would bring it in, although in the long run, a common, Thai-based system might be of considerably greater permanent benefit to them.

Other missionary efforts at developing writing systems in languages related to minority languages of Thailand can be seen, for example, in an area many hundreds of miles from where Jonathan Wade worked on Paganyaw. About the turn of the century a missionary in South China named S. Pollard invented a writing system for the Flowery Miao, a group related to the Hmong (Meo) groups of Thailand (see Sample 3). Whereas Jonathan Wade had based his writing system for the Karen on the available Burmese pattern, Pollard did not want to use the extremely cumbersome and pedagogically difficult Chinese system for the Miao but instead invented an entirely new system which was very successful and spread widely among Flowery Miao people in China. It in turn was adapted to other Miao groups and other languages in South China. It has not been used in Thailand.

[illegible]

Soon after Pollard's work was established in South China, another missionary, J.O. Fraser, devised still another writing system, this time

for the Lisu language (Sample 4). It also was highly successful and many thousands of Lisu today still read it. The number of Lisu who do so in Burma is probably growing steadily all of the time. In Thailand it is used by a growing number.

"A: M A MI=YI. TV. JN M L: JO TV. M: dI:
YE FI SI=LI: dI; LI: P M SV; MY M7 FI BE=
WU-S NY=YIA BI R: TI. TV. G7: K7 N OI=MI
NV L: JO TV. NI, NN LO"

Sample 4. Western Lisu in Fraser Script

Roman alphabet systems from neighbouring countries

In addition to the Romanised system of writing Paganyaw (Sgaw Karen), several other writing systems which use a Western alphabet are in limited use among the hill tribes in North Thailand. All but one of these were developed outside the country, either in Burma or in Laos. Only the case of Lahu, not covered in subsequent chapters, is mentioned here.

Before World War I, H.H. Tilbe prepared a Western alphabet writing system for Lahu. During the 1930s this was revised by J.H. Telford and has had minor revisions since (Sample 5). It is used by thousands of Lahu in Burma and by over a hundred in Thailand. There are some publications in Lahu, notably two New Testament translations, one by Paul Lewis and his committee of Lahu in Burma, and the other by Vincent Young. A large hymnbook has appeared also. In Thailand, sets of lessons for learning Lahu have been prepared by Larry Peet. For a discussion of this Lahu orthography and its relation to the sound system of Lahu see Matisoff 1970.

Ga.li.leh[~] g'ui[~] po pa[~] lo Ye.su[^] k'ai cheh[~] hta[~], Si[~]mon.
leh yaw[~] ve aw[~] nyi pa[~] An.dreh[~] g'ui[~] po aw[~] hk'aw lo
geu[~] hpeh[~] cheh[~] ve hta[~] g'a maw[~] ve yo[~]. Aw[~] lawn k'o.
yaw[~] hui[~] ma[~] leh[~] nga[~] ca pa[~] hpeh[~] ve yo[~]. Yc.su[^] k'o[^]
ve, Nga[~] hk'a[~] suh la[~]-o[~]. Nga[~] naw[~] hui hta[~] chaw ca
sheh[~] hpa[~] te teuh la[~] tu[~] yo[~] teh[~], yaw[~] hui[~] ma[~] hta[~] k'o[^]
pi[~] ve yo[~]. Yaw[~] hui[~] ma[~] te[~] caw[~] ha[~] geu[~] hta[~] teh

Sample 5. Lahu in Western Script

Pre-World War II efforts at writing minority languages in Thailand

Before World War II very little attention was paid to the minority language groups of Thailand. Some Karen Christians from Burma were in

contact with Karen on the Thai side of the border, and the Paganyaw (Sgaw Karen) writing system so widely used in Burma was used to some degree in Thailand also. Otherwise, however, very little effort was to be seen.

During that period the cases in which a distinct effort was made by missionaries to provide a new writing system for a minority group in Thailand itself were all unsuccessful.

For example, one of these was around 1918 when Mrs C.H. Crooks wrote Khmu' in the old Myang (Northern Thai) script (Sample 6) then in use for Myang. Several factors contributed to the failure of this experiment in spite of the printing of a few small parts of the Bible in very small editions.

For one thing, when the Myang script itself became virtually obsolete for general purposes, it left no practical cultural basis for writing the Khmu' in a system based on it. But more important was the fact that there was no consistent continuing missionary effort among the Khmu' in Thailand, either the migratory Khmu' coming into the Chiang Mai-Chiang Rai¹ area as labourers from Laos, or the more settled Khmu' in the Nan region. Other languages were also written briefly in Myang script during the same period.

မြတ်ဗုဒ္ဓ၏အသံအသွယ်ကို
 ရှိသမျှသောအသံအသွယ်ကို
 ရှိသမျှသောအသံအသွယ်ကို
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 ရှိသမျှသောအသံအသွယ်ကို

Sample 6. Khmu' in Myang Script

Another type of experiment came about 1930 when writing systems were prepared by C.K. Trang for Hmong Njua (Green/Blue Meo) and for Mien (Yao). These were done with Thai letters, but as an examination of Samples 7 and 8 will show, they were not always done with reference to the Thai system of organising its letters. Vowels which are supposed to precede, to go above, or to go below consonants were sometimes strung

¹For the romanisation of Thai place names I follow Royal Institute 1968a,b.

along after them in the Western fashion rather than the Thai fashion (Appendix 2).

Again these efforts failed in spite of the fact that small parts of the Bible were printed in these writing systems. There was no consistent literary effort nor consistent missionary work among these people, and the writing systems themselves were completely unsatisfactory.

อักษร ๕ ตัว คือ อักษร
 นก นก- นก, นก นก นก นก นก นก นก นก นก นก
 นก นก."

Sample 7. Hmong Njua (Blue Meo) in Thai script but without adequately following the Thai system.

อักษร
 อักษร อักษร อักษร อักษร อักษร อักษร อักษร อักษร
 อักษร อักษร อักษร อักษร อักษร อักษร อักษร อักษร

Sample 8. Mien (Yao) in Thai script but without adequately following the Thai system.

The post-war period

After World War II, missionary efforts among the minority peoples of Thailand increased considerably. Part of the upsurge came when missionaries who had been working in South China among some of these same or related hill tribes groups were forced out of that country by the communist advance. They wanted to continue their efforts in other places where these hill tribes were to be found.

Another contributing factor was the development of linguistic technology such that missionaries were able to get training to make it possible for them to learn and use unknown languages more adequately, and to prepare writing systems for them.¹

As missionaries came into Thailand from South China, and as others came to work among hill tribes people for the first time, a major concern was to make it possible for the hill tribes people to be able to use the writing systems and the books which were already available from elsewhere. They saw enormous advantages in not having to duplicate the extensive efforts that had already gone into preparing writing systems, translating, and writing in some of the languages. For example, the thought that books being used by the thousands of Lahu readers in Burma could also be used by Lahu in Thailand without any additional effort except the effort of importing them and teaching people to read was an attractive one indeed. There would be no need to devise a new writing

¹See the various degrees of linguistic training by which the authors of this book have benefited, as outlined in the Introduction.

system and experiment with it for years, no need to make new translations and write new books.

As surveys were made, and as experience was gained, however, little by little it was found that in many cases the languages used in Thailand were enough divergent from the related languages on which the writing systems were based to create difficult problems when using the writing systems and materials from outside the country. In some cases their use was impossible. Some of the missionaries, therefore, began to turn to considerations of writing these local hill tribes languages themselves. Then again, some groups were found in Thailand for which there were no writing systems elsewhere at all.

A pattern therefore developed such that when it was possible to use literary materials from elsewhere for the minority languages of Thailand, this was done. The Paganyaw (Sgaw Karen) in Thailand increasingly learned the Paganyaw script prepared over a century ago in Burma, and read books from Burma. The Lahu on a much smaller scale read Lahu books from Burma. But study showed that because of the large difference in language, the Phlong (Pwo Karen) of the Chiang Mai region could not use the Pwo Karen of Burma, and efforts to devise its own writing system began.

Another factor to which we have only lightly alluded was at play, however, during this post-war period. To give it proper perspective we need to turn to the larger question of language policy. Since serious work on orthographies for minority peoples in Thailand was undertaken only by missionaries, we first consider missionary language policies.

Missionary language policies

Not all missionaries think exactly alike on questions of language policy implicit in their work. Among the missionaries who have prepared the writing systems described in this book, however, there is a considerable consensus, and an examination of their policies may serve to make more intelligible the language activity in which they have been engaged.

In the first place, these missionaries find that the comprehension of the Thai language which many of the minority peoples have is often so low that it does not provide a suitable means of communication with them on anything but a superficial level, if it is possible at all.¹

¹LePage 1964:15 points out that, "Even in a comparatively small country like Britain the Welsh-speaking Welsh and the Gaelic-speaking Scots, to say nothing of the Lallans-speaking Scots, need bilingual intermediaries between themselves and the government, and for dealings in the law."

They are therefore very much concerned about the problem of communication with them. This relates directly to their religious work, and to their daily lives as they travel among and live among such people. They are also concerned, however, on a larger scale because they are genuinely interested in the minority people themselves, their development, their welfare, and their relations to the outside world, especially to the Thai. Communication with the outside world lies at the heart of many of the marginal peoples' problems, and the missionaries sense this acutely.

The need to read and write is one of the very important needs missionaries see among minority people in this modern day. They feel that minority people cannot develop, cannot gain a competitive advantage in the world, cannot enlarge their horizons if they do not have access to sufficient education, and particularly the ability to read and write.¹

Need for Thai-based writing systems

Most missionaries recognise, however, the obvious fact that to gain a competitive advantage in a nation such as Thailand, some of the people from minority languages must have education in Thai. They see the need for the development of schools among the minority language people, and for other opportunities where such people may learn the Thai language and the Thai writing system. For some missionaries, but not all, this provides a strong motivation in the direction of the preparation of Thai-based writing systems for the minority language people. The authors of the various chapters in this book want the minority language people to be able to step on from the ability to read and write their own language to the ability to read and write Thai.

This point of view did not come all at once. At first most of the missionaries among minority peoples in Thailand wanted to base their alphabets on the Western system. The efforts of Eric Cox and some others for Mien (Yao) described in Chapter 8 were such a case. The missionaries promoting the Romanised system for Paganyaw (Sgaw Karen) still feel it is best.

Gradually, however, in the early 1960s, there were more and more such missionaries who realised that although at the time there were not very many Thai schools among the hill tribes in the North, and although in many places there was little regular, intensive, village-wide contact between the hill tribes and the Thai people, the day would come when

¹ See the excellent summary of reasons for literacy programmes in minority languages in Walker 1969:148.

this would change. These missionaries sensed that the only avenue to education which the minority language people had was through Thai. Even in missionary terms, the education of tribal Christian ministers and the wider reading in Christian literature would ultimately have to be in Thai. It would be an impossible task to provide a large body of literature and full training programmes for all the relatively small minority groups.

This was not to say that these same missionaries did not feel the importance of writing the minority languages or of preparing basic Christian materials in them. Many were thoroughly convinced of this necessity because communication with the hill tribes people solely through Thai was a virtual impossibility. They were concerned rather about future development and growth of education, and about the possibility of transferring the skills gained in reading one language (the minority language) to another (the national language). The hill tribes should have to learn to read and write only *one system*, and the habits of identification of letters in reading which they learned in their own languages they should be able to carry over to Thai as they began to learn Thai. At the early levels of education which would be involved, they should not be forced to learn both the Western and the Thai systems (except, of course, for the few individuals who might eventually learn English or some other Western language as such), as this would not contribute as much to their potential education and advancement. Learning to read the minority languages in Thai script would open a door to the Thai language. Learning to read them in Western script would be a blind alley.

In 1958, under my leadership at a week-long seminar in Chiang Mai, a great deal of time was given to the problem of writing minority languages in Thai script, and even in those cases where the missionaries were satisfied with the writing systems from outside of Thailand, some thought was given as to what could be done to prepare a Thai-based orthography if necessary. Since that time, the realisation of the importance of the use of the Thai system for minority languages has greatly increased. So have the pressures from the minority peoples. Whereas formerly they were showing no interest whatsoever in Thai culture and Thai education, now many individuals are strongly motivated toward education. Some of them (though by no means all) see the writing of their languages in Thai script as a step in advancement towards the education in Thai which they want. In a relatively short space of time the climate of opinion among some minority language peoples changed quite strongly.

But why, then, not simply concentrate on teaching Thai to the minority

language people? Some missionaries have done some informal teaching of Thai,¹ but the problem of communication with the minority language people still remains uppermost in their thinking. It will be a long time before enough Thai is known in many minority language areas so that learning to read Thai as Thai will become an efficient process. Such missionaries see the development of writing systems for the minority languages, based on Thai script, as an important step in the direction of literacy in Thai because it means that hill tribes people can learn to read and write the language which they already speak, which they understand, in which they can communicate, without the heavy burden of learning both the Thai language and the Thai writing system at the same time. Once able to read and write their own languages, minority language people who learn enough Thai to do so may also readily apply the knowledge of the Thai writing system to the reading and writing of the Thai language.

This point of view is based on the pedagogical principle that it is easier to learn to read and write what one can already speak, and that basic reading skills are different from the skills of talking. It is true that the hill tribes people will have to learn to speak Thai in order to communicate with the Thai world. When they do so it would be decidedly to their advantage if they already know the Thai system as used in their own languages (Nida 1949; UNESCO 1953; Turner 1964; LePage 1964).

Another motivating factor in this regard is that with the increasing advent of Thai schools, there are increasing numbers of speakers of minority languages who learn the mechanics of reading Thai to a degree without being able to understand much of the Thai language they try to read. They can often apply these reading skills with understanding when they have reading materials in their own language written with Thai script. The act of reading their own language makes functional a skill which is not functional so long as they are trying to read a level of Thai which they do not understand. With increasing knowledge of Thai language this reading skill can be increasingly applied to the reading of Thai. Thus the missionary finds that he can communicate through writing with minority language peoples who learned the mechanics of reading in school but who cannot communicate through reading and writing in the Thai language they do not know well enough.²

¹Lewis has done more than that. See Lewis 1970.

²For other significant motives for such literacy efforts see Walker 1969:148.

Need for bilingualism

I think it would be fair to say that most missionaries working among the minority people feel that they should support the development of an effective functional bilingualism among them. It is not enough for at least a good portion of the hill tribes people to know their own language, but they need to know Thai as well, or at least one of the regional languages of Thailand. The missionaries, on the other hand, would not feel that an attempt should be made to stamp out the hill tribes languages. This would not only be cruel but would be most unrealistic as well. It would only create resistance and would doubtless not succeed. Instead, bilingualism, in which a substantial number of the hill tribes people speak not only their own language but also the national language or one of its regional forms, is extremely important. The promotion of literacy in any form is an indirect stimulus to such bilingualism. The more confidence people can gain in reading and writing their own language the stronger the likelihood of their being ready and open to education in Thai. In those cases where the Thai-based writing system is used, the very skill of reading itself makes its contribution towards literacy in Thai.

Unofficial nature of missionary efforts

All of the missionaries who have been working on writing systems for minority languages in Thailand in the post-war period feel that their contributions are tentative and experimental. Some of the writing systems coming from outside of Thailand are not so tentative. The Paganyaw (Sgaw Karen) Burmese-based script, as we have shown, is over a century old. Lahu and Akha writing systems are well established in Burma, although not as strong in Thailand.

Missionaries who have been working in some cases for many years on the development of the various systems have done so because there was nothing else available. Where something else was available they have used it, and where something else suitable to become available they would use it. They have simply stepped in to do something that they felt needed to be done.

The orthographies which they have prepared in many cases have been revised repeatedly over a period of years because improvements have been suggested or discovered through use and experimentation. In one or two cases the tribal people themselves have shown resistance to change in the systems that they had begun to learn, but even they have usually been willing to change when necessary, as when the few Lavüa' (Lawa, Lua') readers switched over from a Western system to the Thai-based

system described in Chapter 11. This remark, of course, applies again only to those systems which are not yet deeply established. For those which are, there would be resentment on the part of the tribal people if they were required to change (Walker 1969:153-5).

Much of the work of orthography planning represented in this volume may be wasted if government opposition should develop, or even if there is not government encouragement.¹ The question of present and potential government policy is therefore of crucial concern.

Government policy in the face of linguistic diversity

In the earlier years of this missionary language planning (up until the early 1960s) the government was showing almost no interest in any form of education or language policy for the hill tribes of North Thailand.² Although Thai schools were widely prevalent in Northern Khmer and Kuy areas of Northeast Thailand, greatly stimulating multilingualism in those areas, they were not making more than a dent elsewhere in the hundreds of thousands of people who spoke little or no Thai.

Even today I think it is probably fair to say that in spite of the mushrooming government interest in the problems created by linguistic diversity as ethnic minorities threaten national unity,³ there is still no over-all government language planning for minority groups.⁴ There are, however, some evident elements of policy which emerge sometimes in laws and official statements, and more often in characteristic patterns of dealing with minority peoples.

The fundamental orientation of such Thai government policy has been assimilative. That is, it has been assumed that everyone in Thailand

¹Walker 1969 rightly stresses that a successful minority language literacy programme "must have the acceptance, if not the active support and participation, of both the... population who are to become literate and the establishment" (148), which in Thailand includes the government to an important degree.

²Rekha 1969:94 reports that in ten provinces of North Thailand where there are hill tribes peoples (Nan, Chaing Rai, Chiang Mai, Mae Hong Son, Tak, Phitsanulok, Phetchaburi, Phetchabun, Lamphun, and Lampang), there were four hill tribes schools established in the period 1935-1937. In the next fifteen years up until 1952, thirteen more such schools were established. However, in the next two five-year periods, twelve and sixteen new schools were established, respectively. Then in the three year period of 1963-1966, thirty-six schools were established, making a total of eighty. These figures are for schools under the Ministry of Education and do not include Border Police schools. Yet great as this acceleration is since the early 1960s, it is only a drop in the bucket in most areas.

³This whole question is to be treated in considerable detail in Smalley, forthcoming.

⁴Noss 1967:193 points out that neither the Thai constitution nor any other official document makes a formal statement of general language policy. This is, of course, a reflection of the unquestioned security which Standard Thai has as the language of the country.

should in some way or other, over a greater or lesser length of time, be assimilated into the exclusive use of Standard Thai. This applies to the speakers of regional Thai languages and dialects as well as to minority language speakers. To my knowledge, however, the only major situation in which this policy has been enforced with any rigidity is in private schools. Universally throughout the country, schools with Chinese language curriculum in particular have been forced to change to Thai language curriculum,¹ a move which has decidedly weakened the strength of the Chinese language among second- and third-generation Thai of Chinese ancestry in the major cities. There has been no systematic attempt to restrict the use of Chinese in any other way within the country, to my knowledge, although there are restrictions on the importing of Chinese language texts without control or censorship. It should be remembered that the Thai government has felt a threat of powerful alien influence and control through the medium of Chinese.

Elsewhere the policy tends to be more mildly interpreted and enforced. Classes are supposed to be taught only in Standard Thai, but authorities overlook the teachers who teach in a regional Thai language or even in a minority language from time to time because their own knowledge of Standard Thai is weak, or because they know their pupils cannot understand it. Rekha forthrightly advocates the necessity of doing this, and registers satisfaction over the number of teachers who are able to do it (Rekha 1969:83-90).

Furthermore, first in Malay-speaking areas and then in hill tribes areas, the Ministry of Education has given considerable attention to the development of special curricula geared to the problems which minority children have because of their lack of knowledge of Thai language and culture. The first special curriculum for the hill tribes schools was promulgated in 1965. The Ministry of Education has held special training programmes for its teachers and for those of the Border Police, to orient them to the problems of teaching children of different linguistic and cultural background (Rekha 1969). Rekha, who writes in a Ministry of Education publication, furthermore emphasises the need to recognise that in many hill tribes situations Thai needs to be taught to the pupils as a second language, recognising that their mother tongue is not Thai and developing educational processes differently from schools where the mother tongue of students is Thai.²

In spite of the increasing efforts of educational authorities, however, and in spite of many genuinely successful schools, much of the

¹The effective law at the present time is the Public School Act of 1954.

²This emphasis occurs repeatedly in Rekha 1969.

educational programme produces little result. After their survey of every hill tribes village in northern Chiang Rai province, Hanks *et al.* reported that schools were of limited usefulness for bringing tribal people into the Thai nation, that few tribal peoples understood the advantages of literacy in the Thai language, that attendance was irregular, that classes met so infrequently that even when interest was high, learning suffered.¹

The government at times has also seemed in theory to have a mild policy of encouraging government officials to speak the language of the area in which they work. General Praphas, then Deputy Prime Minister of Thailand, gave the following order in a speech in Surin:

You can take this as an order, that government officials in areas where different languages are used must know the languages. The governor of the province should establish language classes. This is an order which will come out right away. May Surin Province be the first to take a blue ribbon for doing this.²

However, although there are individual officials who take seriously the learning of the language of the people for whom they are responsible, this "policy" does not seem to be anywhere enforced or widely followed. Not even competent interpreters are necessarily used (Hanks *et al.* 1962:2).

On the question of writing those minority languages which do not now have adequate writing systems, there does not seem to be anything which could be construed as government policy. Officials seem to have varying opinions, ranging from hostile to sympathetic, but practical discussion of the matter often gets hung up on either the inability to see any point in writing the languages of minority peoples because "in a generation they will all speak Thai", or the inability to see how it can be done anyhow because of the technical difficulties involved.

For example, in the introduction to a first reader for Hmong (Meo) children (Educational Demonstration Unit 1966) the Director-General of the Department of Elementary Education remarks that consideration was given to the idea of preparing the introductory reader in Hmong, so that children could learn the values of the letters in their own language before switching to Thai. However, he indicates that the committee ran

¹Hanks *et al.* 1964:71,72. They go on to say, "We also draw attention to certain literate villages, particularly the Christian ones, where many already write their own language and can speak Thai, though not read and write it. Some such persons with no more than a year's training could become literate in Thai and serve as an additional source of teachers for tribal villages. In addition to teaching children, these teachers may find adults interested in becoming literate in Thai."

²Delivered 16 May, 1965, in Surin. For the original text see Praphas 1965:22.

into insurmountable problems. They could not spell all of the Hmong words in Thai script because of the differences in sound between the two languages, and there were differences of word order. They compromised by making the pictures Hmong-like¹ and including a few Hmong words where they could spell them easily. Clearly there was no antagonism here to the idea of writing minority languages in Thai, if it is kept in relation to the wider policy of teaching Thai languages. The technical problems, however, were beyond them.

Occasionally there seem to be some officials who take the position that the best answer to the minority language problem is suppression, as rapidly as possible, of language and culture which is not compatible with Thai life. This point of view is analogous to the heavy-handed policy which many American administrations have had toward the Indians in the United States. Yet in spite of such policy there are more Navajo (Indian)-speaking people in the United States now than there were thirty years ago. Aside from the moral implications involved, unwanted side effects of such a policy can be disastrous for the people concerned and ultimately increase the problem for the Thai nation.

Anyone advocating a sharp policy of forced assimilation should read such a book as Vittorio Lanternari's (1963) *The Religions of the Oppressed*, on the reactions of people to oppression. It ranges from the lootings and murders in Congo to the Mau Mau movement, from the "Cargo Cults" of primitive Melanesians who think that their ancestors will come back to destroy their oppressors and bring modern wealth to the "Ghost Dance" of the American Indian whose ancestors were to destroy the White Man and restore the land to the Indian. A minor cargo cult has broken out among Khmu' and Meo peoples of Laos within recent years (Smalley 1965; Halpern 1960), which shows that this kind of phenomenon may not be as remote as it may seem.

In addition to the Ministry of Education, several other agencies of the Thai government are also concerned with the problem of a more constructive assimilation of minority peoples. The Border Police and the Department of Public Welfare (Manndorf 1967), with its Tribal Research Centre deserve special mention.

The end result of these efforts, along with the natural contacts of trade, is increasing multilingualism, increasing ties with Thai government and Thai economy. For some of these peoples this process of assimilation has been going on for centuries, and many people who are truly Thai today are descendants of ancestors some of whom were non-Thai,

¹Unfortunately the book is marred by the fact that many of the drawings of Hmong people and settings are not fully authentic.

related often to one or another of these same present-day minority language groups.

Certainly education in Thai is most important for Thailand's minority peoples, but what is the best way to bring this education about? We would like to see the Thai policy in language planning turn firmly to the fostering of bilingualism and planned bilingual education. The child learns to read and write his own language, preferably using a Thai-based script with Thai letters insofar as the sounds of his language match Thai, making adaptations where they do not. He already speaks his own language, so his learning process is that of learning to read and write the language he speaks (the minority language), in a manner analogous to that of a Thai child who learns to read and write the language he already speaks (Thai).¹ Isara Charanyananda (n.d.), for example, has found that Kuy, Khmer and Malay-speaking children in Thailand's Northeast and South are one school grade behind Thai children in their ability to hear Thai tones, and this on the fourth grade level. Tone recognition is, of course, only one factor of many involved in learning Thai, and these three languages are more similar to Thai in other aspects of sound structure than such Tibeto-Burman languages of the northern hills as Lisu, Lahu or Phlong.

On the other hand, bilingual education for such a variety of languages as exists in Thailand, some of them spoken by comparatively few people, is an extremely heavy educational and administrative load for a government to have to bear. Although some minority language groups in Thailand are large enough to warrant the investment in time and money involved, the preparation of books and the training of teachers to teach bilingually in some of the smaller groups scattered in the hills of North Thailand is probably out of the question on any widespread government basis, at least for the time being (Bull 1958; LePage 1964; Ray 1963).

Even where this is true, the modest work which lies behind this book could be of service to Thailand. The missionaries who wrote these articles are not conducting schools, but the adults (and some children) who learn to read their own languages through the informal contacts of

¹"If there be interest in stimulating the demand for schools, teaching tribal people to read and write their own languages seems to serve this purpose... Though some knowledge of the tribal language is desirable prior to teaching, a teacher working with an interpreter need know little more than the symbols necessary to write the language. ...There [is] no necessary conflict between teaching children to read and write their own tribal language with Thai letters and teaching them also to read and write the Thai language. At certain stages the tasks will reinforce each other." (Hanks *et al.* 1964:73).

the missionaries will be helping to build the bridge to Thai. Unless there are drastic political and military shifts in this part of the world, the educational future of the minority language peoples in Thailand is tied up with Thai. Thai language will be the language of education, Thai writing the great window to the outside world. Thai schools are penetrating slowly into the mountain areas of the North, very rapidly into the plains areas of the Northeast. The authors of this book will welcome continued responsible government steps in the direction of minority language literacy and will cooperate with them. We hope that the efforts in which we have engaged will be of use to the government agencies which undertake this responsibility.

Criticism of missionary literacy efforts

Missionary activity in writing minority languages has sometimes been misunderstood and criticised. The missionaries engaged in such activity are not trying to hinder the advancement of Thai. Rather, their efforts over the long run may well provide a bridge to Thai. The more contact people have with books, the more they will turn to Thai for advancement. Some missionaries who are not using Thai script for teaching minority people have been criticised for not doing so. Their reasons are simply that the particular languages in question already have writing systems and written materials available from elsewhere, or the people themselves have resisted change. Many of these same missionaries have experimented with Thai-based scripts and are willing to change to their use if and when it is wanted by the people concerned.

There has been other uninformed criticism. Some of the sounds of the minority languages differ from Thai, sometimes drastically, sometimes a little, as we will see in the papers which follow. This means that sometimes Thai does not have all the necessary symbols to supply directly for every significant sound in a minority language. Adaptations from Thai conventions have to be made in writing the minority language. Or it means that there are combinations of sounds which do not occur in Thai, and so some of the spellings look queer to the Thai observer. Some Thai people have considered this an offense to the Thai language. Examples of such "non-Thai" combinations would be Hmong Daw (White Meo) <ເຢຣັຍ nrhiav>¹ 'search' or <ເຈ້ tsev> 'house'. Such transcriptions are explained in Chapter 4.

One story will illustrate the kind of misunderstanding which can arise. In Thai the first letter of the alphabet is named after the word

¹< > encloses orthographic examples or transcriptions.

for 'chicken' ᩃᩣ᩠ᩅ /kàʔ/¹ which contains this sound. The letter is called /kɔɔ kàʔ/. The Lavüa' (Lawa, Lua') word for chicken, however, does not begin with this sound, but the word for 'fish' does: /kaʔ/. The initial consonant of the alphabet has therefore been called /kɔ kəʔ/ in teaching Lavüa' people to read Lavüa' in Thai writing. The Lavüa' parallel in principle was taken, using the Thai way of doing things, but with Lavüa' words. However, some Thai people in hearing about this have felt that the Thai language and alphabet were being violated.

Modifications in alphabets as they spread

The reactions are not surprising, and the authors of the chapters in this book have made it a point to develop writing systems which were as close to the Thai system as possible. The fact remains, however, that the languages being written in this way do differ from Thai to various degrees, and the system of spelling must therefore differ in details. These instances of difference are discussed in each chapter.

However, to put this problem in greater historical perspective, I would like now to point out how various traditions have spread in the history of writing, and how they have been modified to fit new languages as they spread. Thai writing itself was modified from Khmer, which was modified from some form of writing in India, and so along back. The same has been true of Western alphabets and Arabic, and of other instances of scripts derived from India.

A moment's reflection will show that European languages do not all have the same writing conventions. French <é è ô ç>, for example, do not exist in English. Twi in Nigeria, furthermore, has letters like <ɔ ɛ ɲ> which are a decided departure from the European languages from which the writing system was derived. <pf> is not an English combination of letters, but German has it in Pfennig 'one-hundredth of a mark'. We are so used to seeing these differences in languages written with Roman script that we think nothing of them, and the differences in one system are in no way a threat to any other system.

Note how greatly the Roman system was modified for use in Vietnamese: <Nhà Ông Tư ở đâu?> 'Where is Mr Tu's house?'. Combinations like <nh> do not occur in many European languages. <ư> and <ơ> were specifically invented for Vietnamese, and serve for the sounds which in Thai are written <๓๓> and <๓-๓> /+ ə/. The number and variety of diacritical

¹/ / encloses phonemic writing. That is, in this case, the Thai word is transcribed by a system which represents each phoneme (significant sound unit) with a single unambiguous symbol. The system we follow throughout this book for the phonemic representation of Thai may be seen in Appendix 2, Charts 1-3. Phonemic representation of other languages is described in the respective chapters.

marks over the vowels in Vietnamese is unusual, as is the special <đ>. The point is that these do not occur in European languages, but no violence is done to any Western language by these adaptations.

Next to the Roman alphabet, it is the Arabic system which has spread most widely, as it has followed the expansion of Islam. Arabic writing systems have been used for languages as remote (both geographically and genetically) as Spanish and Malay. The languages of the Middle East, the principal languages of North Africa, Urdu, Kashmiri, Sindi, Pashto and some other languages in Pakistan, as well as Malay in Indonesia, have traditionally been written in Arabic script, and most of these important world languages still are,¹ although there was a shift to Roman during Dutch rule in Indonesia. Javanese was written in Arabic script only for religious purposes, and other languages in Indonesia have made some use of Arabic scripts alongside ones derived from India.

There are differences from language to language within the Arabic writing tradition. Shapes of letters vary from region to region. Differences in the number of significant sounds in different languages have brought about modification of the number of characters, changes in their value, etc., so that the various orthographies in the Arabic tradition differ in ways somewhat analogous to such differences in the Roman tradition as English, German with its Gothic letters, Twi (Nigeria, Africa) and Vietnamese, as already discussed.

The next most extensive writing tradition is the Indian one. Here the graphic differences are even greater than in the Arabic, both within India itself, and in comparison with the writing system as applied to Thai, Burmese, and languages of Indonesia.² Modern Thai and modern Cambodian scripts have somewhat differing shapes and have had differing influences upon them, but both are ultimately derived from the ancient Khmer writing of the Cambodian civilisation which in turn was modified from a script in South India. This South Indian script was different

¹Turkish as used in Turkey is a notable exception now. It is in modern times, however, that under the degree of Kemal Pasha Ataturk writing was changed to Roman script. Turkish and various languages and dialects related to it have been written at various times in at least the following writing systems: Cyrillic, Armenian, Greek, Hebrew, Arabic, and Roman. See Diringer 1953:567-8.

²When two languages are related they are descended from the same parent language as speech systems. They may or may not have the same orthographic tradition. It is perfectly possible for the same script tradition to be used for unrelated languages (English and Vietnamese), or for two related languages to have different script traditions. In fact, Urdu and Hindi are almost identical in their language structure (though differing somewhat in vocabulary), but the one uses the Persian script from the Arabic tradition, and the other uses Devanagari and other related systems for its writing.

from, but related to, the classical Devanagari script. The extension of the South Indian script in various modified forms into Southeast Asia, including Indonesia, went along with the spread of Hinduism and Buddhism. Where Islam followed into Indonesia there was occasionally an ambivalence (as in Javanese) between the Arabic system and that derived from India.

So Thai writing itself is the culmination of a long process of adapting scripts from one language to another, and it is no discredit to Thai to pass that heritage along to other languages spoken within its borders, if sound principles are used, as discussed in the next chapter.

Missionaries as carriers of literacy

The phenomenon which is to be seen in this book is not by any means unique in the world. The first language reduced to writing by Christian missionaries was Gothic, in which the orthography was prepared by the famous Ulfilas in the fourth century A.D. Literacy came to much of Northern Europe centuries ago through the efforts of missionaries travelling north from Rome. Literacy has come to much of Africa through the efforts of missionaries writing scores of African languages for the first time, translating books into them, and teaching people to read. The same can be said for Latin America, for the Pacific Islands, for the Philippines.

We estimate that today in different parts of the world there are well over 1000 missionaries engaged in the work of analysing languages, preparing primers and literacy materials, and writing and translating literature for minority peoples here and there. In Vietnam one group of missionaries trained as linguists has a contract with the Vietnamese government to do this for many of the languages of southern Vietnam. The same group has signed contracts with the governments of such varied countries as Mexico, Ecuador, Peru, Brazil, some African countries, and Nepal for the same purpose. It is interesting to remember that the present Vietnamese writing system was designed by missionaries in the seventeenth century, and was fairly well codified by a dictionary published by the missionary Alexander of Rhodes in 1651.¹

Not all of the missionaries who have devised writing systems in Thailand and elsewhere have done well. As indicated earlier in this chapter, some cases in Thailand were completely abortive. Not all missionaries are qualified for the task. But by and large, around the

¹deRhodes 1651. See also Nguyễn-Đình-Hoà 1955; Thompson 1965:52-7.

world, in hundreds of languages, people are literate today who would not be literate were it not for missionary efforts. In many of these countries in this modern day, governments have picked up from where the missionaries left off. Missionaries, of course, have no desire nor the resources to compete with governments in the education of minority peoples, but through their often unique special knowledge of the language and people, they seek to make literacy possible where it is not yet available through other agencies.

CHAPTER TWO

BASES FOR POPULAR WRITING SYSTEMS

WILLIAM A. SMALLEY

The preparation of a new writing system which will be maximally useful to the people who need it is no small matter under the best of circumstances, and it is additionally difficult when Thai is being used as the base writing system. An adequate, self-consistent and teachable system cannot be devised simply by writing words in Thai symbols the way they sound. Instead, the sound system of the language to be written must be studied to see just what distinctions occur, and under what circumstances, and then it must be determined how the Thai system of writing as a whole can be best adapted to represent the sound system of the language to which it is being applied, in a way that will meet acceptance by potential users.

In keeping with the rest of this book, I am here discussing those situations where the preparation of a writing system is at least in part stimulated and assisted by outsiders to the language for which the planning is taking place. In cases like these there are certain minimal requirements for the assurance of reasonable success.

1. Orthography preparation must involve the active cooperation and participation of intelligent speakers of the language, and ultimately the backing of opinion leaders. An outsider, no matter how well trained and no matter how well he knows the language, can never do this task alone. Everything must be worked out against the reactions of intelligent people in the community, tested by experimental teaching to people who want to learn and by observing how various types of people use the system. Ultimately it will only succeed and take over if opinion leaders in sufficient numbers endorse it.

2. Orthography planning must involve an analyst who has an extensive personal knowledge of the language, and at the same time a strong sense of the significance of sound distinctions and sound variations within a language. A linguist¹ who also knows the language well is the most obvious kind of person to fill this requirement. However, some of the authors of this book are not linguists (Introduction), but have succeeded in gaining enough understanding of sound structure to do the job (Sjoberg 1966:262).

When an untrained person hears a new language he listens to it in terms of his own language or other languages which he has previously learned, rather than in terms of the language being studied. The science of linguistics ideally trains people to look at a language somewhat more objectively, and to see it in terms of its own structure and the unconscious significance which the sound system has for the people who use it. An illustration of what this can mean is the fact that as a trained linguist, in a few days of working with a native speaker of a language which I cannot speak I often learn more systematic information about the sound structure of that language than the untrained person may gain through many months or even years of learning to speak the language.

3. Orthography preparation must involve someone who sees it as a part of the social role of language and of language planning. Professional linguists are not necessarily equipped by their linguistic training for the fact that there are sensitive social and educational components to any effective writing system, and that the acceptance or rejection of a writing system or parts of it by potential users is related to many non-linguistic factors.

4. Orthography preparation must involve experimentation and modification over a period of several months as people learn to use the writing system. Almost invariably modifications will be necessary, the need for them often coming to light through learners' reactions or the difficulties they have.

It is occasionally possible for all of the above requirements to be carried out by the same person, if he is a native speaker of the language who obtains the other necessary qualifications in one way or another. In the situations described in this book the most common pattern is for someone else to serve as analyst, working with native speakers.

¹In this book the word *linguist* does not mean someone who speaks many languages. The term refers here to someone who has professional training and experience in the science of linguistics, which is the analytical study of the structure of language.

In every case reported here except my own, the analyst also had a speaking knowledge of the language, sometimes one which extended over many years of use. In the two languages on which I am reporting I worked not only with native speakers but also with long-time missionaries who made many contributions to the task and who were responsible for implementation, experimentation, and observation of use.

The first phase in devising a writing system, then, is to have a satisfactory understanding of the sound system¹ of the language for which the writing system is being prepared, along with other relevant grammatical characteristics (Sjoberg 1966:262). This is essentially a technical task. Accordingly, in this volume we have tried to describe in somewhat technical fashion the sound systems of the various languages as the authors (or others who have worked with them) have uncovered them.

A second phase consists of determining the way in which the language is to be written, based on many other factors in addition to the structure of the sound system. For Thailand this means, first of all, a choice between a Western system of writing and a Thai-based system. For reasons which we have already discussed, in the past one choice or another has been made, but it is becoming more and more evident that the future of writing the minority languages lies with a Thai system except possibly where there is another system already deeply established. In the discussions which follow we will assume the selection of a Thai system for writing the minority languages with which we are dealing, and in the various chapters we will describe how well the proposed Thai system of writing fits the language.

The remainder of the present chapter will deal with some of the principles and problems involved in developing a well-designed writing system. It will take up, by way of example, some of the underlying questions which must be answered in determining the sound system of the language to be written, and summarise what is involved in representing such a system in Thai script.²

Criteria for a good writing system

The factors entering into the preparation of a good writing system are both linguistic and cultural. They can be summarised as follows, in

¹The most notable exception, of course, is the Chinese system, which uses an entirely different basis than the sound system.

²The principles involved in this task and their application to languages outside of Thailand are taken up at greater length in Smalley *et al.* 1963, from which parts of this chapter are adapted. See also Berry 1958; Pike 1947; Sjoberg 1966; Tauli 1968: 127-33; Venezky 1970; Walker 1969.

approximate order of practical importance (Smalley 1959):

1. Maximum motivation for the learner, and acceptance by his society and controlling groups such as the government. Occasionally maximum motivation for the learner conflicts with government acceptance, but usually the learner wants most what is considered standard in the area.

2. Optimum representation of language. The fullest, most adequate representation of the actual spoken language is, by and large, an ideal. There are some major points of exception here, and these will be dealt with later.

3. Maximum ease of learning. Many writing systems have failed because they were essentially too complicated for a learner, short of spending years in school.

4. Optimum transfer. Here we refer to the fact that certain letters of the alphabet or other written symbols will, when learned, be applicable to the more rapid learning of the national, trade or international languages in the area. Thus, if a new reader learns a pronunciation associated with a certain symbol in his own native language, and if he can use that same pronunciation for the same symbol in Thai, this is a case of transfer. If, however, the same symbol is used with different value in the two systems, or two different symbols are used for the same sound value, that transfer cannot be made.

5. Maximum ease of reproduction. Typing and printing facilities are a consideration of considerable importance.

Maximum motivation

When I was preparing a writing system for the Khmu' language of Northern Laos, my Khmu' friends with whom I was working, and others in the villages, had enormous interest in the task. In the stages when I was doing the linguistic investigation I used a phonetic script based on the Roman alphabet for my own notes, and the Khmu' were rather intrigued by my ability to read their language from these exotic letters. More than once, however, they asked me rather anxiously if it were not possible also to write Khmu' in Lao script. Lao, the national language, was the direction of their identification. A very small but respected minority had learned to read Lao. It seemed very much more appropriate to them that Khmu' be written with Lao characters, and they always brightened up when I told them that this was what we would try to do when we prepared material for them to read.

In one area among the Hmông Daw (White Meo) of Northern Thailand there had been little interest in learning a Romanised script taken over

from Laos, but when a Thai-based script was tried out and primers prepared in it, suddenly the interest of adults and children alike markedly increased (Chapter 4).

There are, on the other hand, instances where different segments of the language group have different attitudes which govern their motivation toward reading different kinds of script. Among the Mien (Yao) people in North Thailand there has been use of a Romanised script, particularly in the Mae Chan (Chiang Rai) area. That area is inhabited by Mien who are relatively recent comers to Thailand and many of them will not hear of using a Thai-based script. In Chiang Kham, however, where the Mien have lived longer, there has been no particular enthusiasm over learning to read this Romanised writing, but when initial experiments in the use of a Thai-based script were made, there was more interest shown. It is too early to know what the results will be, but in a case like this it seems more likely that in the future the Thai-based orthography will win out, other things being equal (Chapter 8).

The Kuy are a people with a long history of life in Thailand. Although antedating the Thai in the Northeastern provinces where they live, they are a people who are assimilating to Thai ways in much of their culture. The identification with Thai life is so strong that there is no question but that a Thai-based writing system has higher motivational value than a Romanised one would have (Chapter 10).

The principle of motivation has to be tested through use in various situations. Other variables differ from place to place, but those who have the responsibility of preparing a writing system for any language, or of changing a writing system for any reason, should adapt that writing system as much as possible to the cultural trends, to the prestige, education, and political goals which are likely to win out. This, I feel, is the most important consideration in a practical orthography. Without it we will have very few minority language people who will want to learn. Without it people may in time turn against a writing system as they become more aware of the culture patterns around them.

Optimum representation of language

We turn now to an emphasis on the importance of accuracy in the correspondence between a writing system and the language it represents. At

this point we enter a more technical field¹ and one which is more subject to misunderstanding by many people. This is very clear from the kinds of arguments and reactions which one often sees concerning a writing system.

The principle involved is this. Any spoken language has a limited number of sound distinctions. An observer from the outside, however, can hear a very much larger number of actual sounds than there are sound *distinctions*. A phonemic writing system is a technical one that represents with a single symbol or an unambiguous combination of symbols each of the structurally different distinctive sounds in a given language. It does not differentiate the nondistinctive differences of sound with individual symbols, but accounts for them by rules. The principle further involves some of the larger grammatical context of which the sound system is a part. The degree of modification or variation in sound represented by each symbol varies according to the structures of different languages (Venezky 1970:263).

To give an example, in English the distinction between a [k̟]² made up in the central part of the mouth, as in the word *kill*, and a [k] made farther back in the mouth, as in *call*, is nondistinctive. The position of the /k/ is automatically conditioned by the vowel that is associated with it. (Feel the difference in tongue position between pronunciations of the two words.) These different kinds of /k/ in English should not be differentiated in phonemic writing, but instead a rule points out that /k/ before vowels made in the front of the mouth is [k̟] and before vowels made in the back of the mouth is [k].

In a language such as Hmong, however, these two varieties of [k] are distinctive and should be written. In Hmong Njua (Green/Blue Meo) the word /kab/³ with a [k̟] like in English *kill* means 'market'. However,

¹For treatment of this technical field, called *phonemics*, see the following:

Gleason 1961:257-85. A lucid exposition, highly recommended.

Hockett 1955. The most complete discussion and comparison of the different phonemic systems of many languages.

Hockett 1958:15-119. An extensive discussion of phonemes and phonemic analysis with considerable emphasis on the English phonemic system.

Nida 1961:100-29. This chapter is essentially a discussion of phonemic principles oriented in the direction of their implications for writing systems.

Pike 1947. A basic text.

There are other, more recent, treatments of the sound structure of language which have a very different orientation. Important as these are for the light they have shed on the question of how languages work, they are not as helpful for orthography preparation as a part of language planning as are the above.

²In citing linguistic transcriptions, slant lines / / represent phonemic writing and square brackets [] represent the details of sounds. < > enclose the written symbols used in the writing system.

³The /b/ is a tone marker (high tone) and not the symbol for a consonant (Chapter 4).

the word /qab/ with a [k] more like the English [k] in *call* means 'chicken'. What is not phonemically distinct in English is phonemically distinct in Hmong. What should not be distinguished by different symbols in English writing should be written with different symbols in Hmong.

This means that a language which is written phonemically represents those sound distinctions which can be shown to contrast. They are in most cases also psychologically significant to the native speaker. Such distinctions are written whether the foreigner feels them essential or not. The foreigner's feeling is based on his own language habits from his own mother tongue. A trained linguist knows how to discover the distinctions in any language in a relatively limited period of time ranging from a week to several months, depending on the complexity of the language. Untrained people have frequently been able by a process of trial and error to find what distinctions really matter in the speech of the people.

An example of this phenomenon can be seen in Khmu' and in several languages reported in this volume. Khmu' /c/ and /ñ/ are distinctive. But at the end of a syllable, final /c/ and /ñ/ are heard phonetically as [yc] and [yñ]. The [y] in this position is automatic, conditioned by the final position of /c ñ/, and so is determined by rules and should not be written.¹

The phonemic principle therefore is this: that every distinctive sound (every phoneme) is represented by one symbol or unambiguous combination of symbols, and only one, in the writing system. This is vastly oversimplified, but the point involved is basic.²

The phonemic principle, however, is only a basis, though an important one, for determining the optimum representation of speech. Strictly phonemic writing does not usually make the best popular orthography. In fact one linguist, Archibald Hill, is quoted as saying that "a good alphabet should give just enough hints (no more and no less) for the native reader to read easily and without ambiguity" (Key 1966:90). With this I would agree, but the technical problem of making the many individual decisions involved in arriving at this point is no small one. Furthermore, the number of "hints" needed varies with the skill of the

¹Smalley 1963:193; Smalley 1961:3. See treatment of this same problem in some of the articles below.

²Some linguists have called the phonemic principle into question. Many of the strictures of these critics are justified. In their terms a modified morphophonemic transcription is more nearly what we are concerned with for popular orthographies than is a strictly phonemic one, but part of the difference is terminological.

reader, his familiarity with the subject matter, and many other factors, whereas the orthography has to be standardised.

One of the many linguistic complications which have a bearing on the application of the phonemic principle is one we can call the principle of functional load. This is related to the fact that in every language there are certain phonemic distinctions, certain significant sounds, which are extremely important for communication, while sometimes there are others which are of almost no importance to communication. It is difficult to illustrate this point from English because the sounds of little importance are generally excluded from our English writing system. But to take an oversimplified example of one instance of functional load from the Hmong Daw (White Meo) language, there is one phoneme /ŋ/ <ŋ>, a clearly distinctive sound in initial position in only one or two words (Chapter 4). Obviously, if that phoneme is not written for some reason, it is not going to be anywhere nearly as serious as if a phoneme which occurs in twenty-five percent of the words is eliminated. The rare phoneme, we say, has a low functional load and the common phoneme a high one. That this same phoneme in Thai has a high functional load has no bearing on the Hmong problem. Functional load lies in the importance of the phoneme in making communication intelligible.¹

One implication of the phonemic principle, the consistent use of final consonant symbols, makes the writing of minority languages somewhat different from Thai. In Thai, for example, <-น -ล -ญ> all represent the sound /n/. And <-ด -ต -ธ -ท> all represent the sound /t/ (Appendix 2). Sometimes the minority languages have more spoken final consonants than does spoken Thai. For example, in Northern Khmer, Mal (Thin), Kuy, and some of the other minority languages the sound /c/ occurs in final position. It is the same sound that occurs in Thai at the beginning of a syllable, represented by <ร>. The *sound* occurs in Thai only at the beginning of a syllable, but the *symbol* is sometimes written at the end of a syllable as a spelling for /t/, as in the Thai word เล่ห์ร. In Mal (Thin) the symbol <ร>, however, has to be used for the /c/ *sound* even at the end of the syllable, and this makes the reading of Mal slightly different from Thai (Chapter 9).

I feel that some of these minor differences from Thai writing conventions cannot be avoided in the writing systems for the minority languages because the structures of the languages are different. They are on the same order as the changes which have been required for adapting the Western alphabet, or Arabic alphabet, or Devanagari alphabet to one

¹ Rarity is not the only reason for low functional load, but it is shown as one kind of example.

language after another, as described in the previous chapter. We have, however, done everything we can to accommodate to the Thai system, often at the expense of some features of the minority language sound system, but always trying to balance the factor of maximum representation of speech against the importance of being able to carry over the reading habits into the Thai language.

Dialect problems also come into the question of the optimum representation of speech. The speech of two different communities or areas in the same language may differ somewhat in sound structure, and it may be impossible to have a single phonemic transcription which will be ideal for both. Sometimes it is best simply to write one dialect and let people in other dialects make an adjustment in learning to read. At other times modifications are possible to make for good representation of speech for a wider range of dialects.¹

In Mal (Thin), for example, whereas one dialect has /c ñ/ in final position in syllables, another has /t n/ instead. Thus /mæc/ 'to see' in one dialect is /mæt/ in the other, and the same pattern applies with other words (Chapter 9). Unless slightly different writing systems are to be prepared for both these dialects, one or the other cannot have maximum representation of its speech at this point. By writing the dialect of greater complexity (the one which preserves the contrast rather than the one which does not have it) both dialects can be read unambiguously. In one dialect people learn to read the symbols <-ṁ -ṇ> as /c ñ/ and in the other as /t n/, even though different symbols are used for /t n/ in initial position, and even though <-ṁ -ṇ> represent /c ñ/ in initial position. This latter dialect situation is, of course, closer to the Thai pattern.

The task of the person who is concerned with orthography planning then becomes a task of balance and judgment. He must weigh the factors of maximum motivation, maximum ease of learning, etc. As he makes these decisions at each point he must remember several facts. One is that there is no intrinsically superior shape of letter or choice of symbol except as it is a part of a system which reflects an optimum representation of speech. Alphabets are primarily matters of usage and tradition. The closer he can conform to usage and tradition without seriously distorting the representation of speech, the better the result is likely to be. However, the more different phonemic features of high functional load which are eliminated by a writing system as read by speakers of one dialect or another, the greater the compounding of the reader's difficulties, and the increased danger of failure for the system.

¹These problems are discussed at length in Smalley *et al.* 1963.

Maximum ease of learning

The learning aspect of our problem has been referred to repeatedly so far, but here I want to discuss learning factors exclusive of motivation. We are concerned with the basic educational problems involved in learning to read.

When I was making an investigation of the orthographic problem of the Gipende language of Congo (now Zaïre), we were testing the ability of school children to read the system in use at the time (Smalley 1958). To do so, a list of sentences containing the sounds crucial to our investigation had been prepared, and we asked the children, selected from early grades on through upper grades, to read these sentences to us. The results were most interesting from the standpoint of the effectiveness of the writing system for various levels of learning. Upper grade students could read all of the material with very little difficulty. Anyone who stayed in school for four or five or six years could learn to read Gipende as it was written at the time.

Students in the middle grades and extra bright students in the lower grades would often read in a very revealing manner, however. They would start out reading mechanically and often mispronouncing the crucial words until they had read enough of the sentence to catch the drift of the context, and then they would go back and re-read, pronouncing the words correctly. This was due to the fact that some of the phonemic distinctions of high functional load were not represented in the writing system and that therefore these students did not know how to pronounce a word when they saw it. It was not until they had full grasp of the sentence that they were able to read. This meant that reading for these typical students was a matter of going backwards and forwards, constantly correcting what they had read before.

Students in the earlier grades read mechanically and understood nothing. When we heard them misread a sentence we would ask them what the sentence meant and they would be unable to tell us. Then we would select the word which had been most seriously misread and would define it by situation, asking for the word that covers the situation. They would reply with the correct pronunciation. We would then turn them back to read the sentence again and they would at this point, having been reminded of the correct word, read the sentence correctly and immediately understand the meaning. Contrast this with some languages where, after three or four weeks of study, a bright child can read anything which is put before him, whether the vocabulary is beyond his age or not.

The reason we can get along with five vowel symbols in English for our complex vowel system is that we can compel children to stay in

school long enough to force them to memorise the spelling of hundreds of words which have only a partially consistent correspondence between symbol and sound.

Consistency in the handling of similar problems within a writing system is most important for maximum ease of learning. Unfortunately, such consistency is impossible to maintain fully with the Thai system of classes of consonants and some other features (Appendix 2). The Thai system is basically a more difficult system to learn than most. We use it because the principle of maximum motivation is more powerful than that of ease of learning, and because of transfer value. However, within the Thai system as much consistency as possible should be maintained. If each significant sound difference can be represented by a single symbol, as against using combinations of two and three symbols for a single sound, that consistency is helpful. If combinations have to be used, it is helpful if they can be used for the same types of problems rather than in a hit or miss fashion.

Of course, in the matter of ease of learning, a great deal has to do with factors other than the orthography itself. A primary one is the programme of literacy education which is carried on. With proper primers, carefully graded materials, and interesting reading matter, ease of learning is considerably enhanced, independently of the difficulties which may be involved in the writing system.¹ However, even the most ideal programme of encouraging literacy cannot really withstand an opposite trend in motivation or a poor representation of the speech in the writing system.

Optimum transfer

The next principle is that the ability to read his native language should enable the learner to read Thai also with as little difficulty as possible. It is not enough simply to select the Thai symbols which correspond in value to the pronunciation of the minority language, but it is essential to use the Thai system of writing with its complexities and even some of its inconsistencies, as closely as possible. We have already mentioned (Chapter 1) some early attempts (several decades ago) to write minority languages in Thai without consistently abiding by the rules for positioning vowels in the Thai system.² This was of little or no transfer value and defeated much of the value of using the Thai symbols in the first place.

¹See such books as Gudschinsky 1962; Gray 1956; Neijls 1961; Laubach and Laubach 1960.

²See Samples 7 and 8 in Chapter 1, together with the discussion there.

Some of the authors of this volume in the early days of their work tried to simplify the Thai system for the minority languages by eliminating the Thai high-class consonants. They did this in order to avoid the difficulty which exists in Thai, that some consonant sounds have to be written with two different consonant symbols in order to accommodate differences of tone which in Thai are handled by spelling the initial consonant differently. For example, in Thai, <๓> and <๓> represent the same consonant /tʰ/ but govern a different set of tones (Appendix 2). By eliminating one of these they felt it would make the writing system easier for the minority people.

Where the minority language had no tone distinctions, little problem was created. However, for the tone languages these orthography planners immediately ran into the negative reaction of every person in the minority group who already knew how to read and write Thai. They felt that the simplified system just was not right. A rising tone cannot be represented by a low-class consonant in Thai, and it seemed utterly incorrect to do so in the minority language. For that reason all of the systems which have tones as part of the speech pattern have shifted over to using the full three-class consonant system even though it takes longer to teach, because it represents Thai better, and very importantly because it makes the relationship and transfer value between the minority language and Thai more satisfactory.

Another case where transfer considerations weigh heavily can be seen in the minority languages where there is no contrast between long vowels and short vowels such as there is in Thai, like Thai <๓> /ʔāt/ 'compress' vs. <๓> /ʔāt/ 'may, might'. In some minority languages like Lavüa' (Lawa, Lua') or Hmong (Meo) vowels may be pronounced short or long under certain conditions, but the difference of long and short is not a phonemic distinction in the sound structure of the language. They do not "contrast", are not distinctively different, as in the Thai example above. The difference between them can be stated by rule. In some of these cases it has nevertheless been necessary to write both long and short Thai vowel symbols because of the necessities of representing some of the tones of the language, and because in certain positions the one Thai symbol better represents what the vowel of the minority language sounds like to native speakers literate in Thai. For example, in Mien (Yao) there is no significant contrast between long and short vowels, but the vowel /o/ between consonants sounds more like Thai short /o/, and is written as in Thai without a vowel symbol (<๓> 'squirrel', <๓> 'jungle'), whereas in final position it sounds more like Thai long /oo/ and is written <๓>.

In this problem of maximum transfer, however, there are always

difficulties because of the fact that no two languages are really alike in their sound systems. Some are sufficiently alike for the difficulties to be marginal and minimal, but in many cases the one language has many more phonemes than the other, or presents a type of sequence of sounds which is difficult to represent in the other writing system. Some of the languages described below, like Lavüa' (Lawa, Lua'), differ from Thai by having no tones; others, like Hmong (Meo), by having more tones than Thai. Some, like Kuy, have more vowels than Thai, or others more consonants (as in Hmong). The adaptations which are made in the Thai writing system should be made so as to destroy as little of the transfer value as possible. These problems are discussed in each chapter which follows, and a tabulation of many of the solutions adopted can be seen in Appendix 1.

Maximum ease of reproduction

This is theoretically the least important principle with which we have to deal, but in our mechanised age when printing costs are enormous it certainly has to be taken into serious consideration. By and large, when the considerations listed above have been satisfied, that way of printing, that choice of symbols, which is the easiest to type and print is the best.¹

There have been some unfortunate mistakes made along this line in other countries. In Vietnam there is a tribal group which has certain vowels which are not written in English but which do exist (and which are written as <ơ ơ>) in Vietnamese, the national language. One proposed writing system did not use the Vietnamese symbols available there but instead used symbols more readily accessible in type fonts outside the country and more readily reproduceable on Western typewriters. The transfer value, the motivational value, the future of these tribal groups lie in the direction of Vietnamese, and the minor consideration of the typewriters involved should not have influenced this decision whatsoever. Actually, in this case printing is not even a serious

¹Hymes (ed.) 1964 states the principle very well: "To write each language as if its sounds had to be differentiated graphically from all other unlike sounds in all the languages of the world would be absurd. The alphabet of a given language would be required to express particularities irrelevant to both the system of the language and the needs of its users, swelling typography and printing costs, and impeding both scientific analysis and practical purposes such as literacy training and education. If we accept the scientific analysis of a language as a system, and consider the practical needs of the users of a language, then we accept the desirability of a simple orthography for each language. We accept also then, as consequence, the necessity of some special learning of the phonetic and phonemic values of the symbols used for each language, for our cultural tradition provides only a limited number of simple symbols."

problem within the country because every Vietnamese press has the necessary characters (Smalley 1954).

As indicated above, many of the minority languages which have been written in Thai script have a more extensive consonant system than does Thai. This means that there are consonant sounds which have to be written, but for which there is no natural Thai counterpart. In these cases the people who have devised the writing systems often took the rarer Thai letters and gave them new values in the new writing system. For example, in Hmong, <ɣ> (Thai /d/) was for a while used for a sound /r/ [ɽ], very similar to the sound it represents in languages of India from which it is derived. (<ɣ> Thai /r/ is also used for another Hmong sound which is more like Thai /r/.)

However, as work progressed in languages like Hmong it was discovered that a symbol like <ɣ> was very troublesome because its tail below the line did not allow room beneath it for the printing of a <ɯ> (Thai symbol for /uu/, a vowel with which this consonant symbol does not occur in Thai but with which it would commonly occur in a language like Hmong). In some such cases the modification adopted was that of a double symbol instead, writing <ɣɣ> for /r/ [ɽ] instead of <ɣ>. This differs from normal Thai conventions, but no readily printable alternative seems possible (Chapter 4).

Thus, when the Thai alphabet does not have readily available symbols for writing some of the sounds of another language, printable adaptations are important. These include using otherwise unused Thai symbols with values different from what they have in Thai, and new combinations of Thai symbols.

Procedures of investigation

We have now discussed the major principles involved in making a decision about orthography in a hitherto unwritten language. We should also say a word about the procedures which should be followed in making a decision on such an important matter.

The first step is to compare the phonemic inventory of the minority language with that of Thai. By comparing the phonemic inventory we do not mean simply listing the alphabets of the two languages; we mean a comparison of all of the distinctive sound contrasts involved in the two languages, whether those distinctive sound contrasts have traditionally been written or not. It also involves comparing sequences of sounds in the two languages because in many cases languages differ drastically in the order of sounds as well as in the list of sounds.

Here, for example, is a comparison of the consonants of Mal (Thin) and Thai. Both are represented in a phonemic transcription based on a

modified phonetic alphabet.

Mal (Thin)					Thai				
p	t	c	k	ʔ	p	t	c	k	ʔ
					ph	th	ch	kh	
b	d				b	d			
m	n	ñ	ŋ		m	n		ŋ	
	s			h		s			h
	l					l			
						(r)			
w	y	ɿ			w	y			

As the charts clearly show, there are relatively few differences between these two phonemic systems so far as the inventory of the consonant phonemes is concerned. (Even the /ph th ch kh/ which seem to be missing from Mal according to the chart are to be found in the language but are classified with the consonant clusters.) This means that at this point the choice of symbols is not too difficult. However, in the sequence of sounds there are many very drastic differences, which means that in writing words there are a number of practical problems which have to be solved in order to get adequate transfer to the use of the Thai system (Chapter 9). On the other hand, Hmong (Meo) has a phonemic system vastly different from Thai, as may be seen in Chapter 4.

The next step is the obvious one of using the symbols of Thai wherever they coincide with the sounds of the language being transcribed. Where there is such a correspondence between the languages the problem is not great. Occasionally more than one symbol may be used in Thai for the same sound, as <ส ศ ษ> for high class /s/. There is no need to use more than one of them in the minority language for /s/, and one or another of them may be selected if necessary to represent some similar sound which does not exist in Thai.

There is, however, a very real problem here in that what may seem to the outside analyst to be a perfectly logical correspondence between the two languages may not seem so either to native speakers who can read and write Thai, or to Thai who know the minority language or hear it spoken. It is very important, therefore, at this point to determine what the Thai interpretation of the minority language sound is, how the Thai observer would write it (if he does so consistently), and also what the educated minority people feel is the best way of writing it.

Where these coincide, this is very strong evidence. Where they do not coincide or are inconsistent, or other severe problems would result, alternatives should be sought in consultation with such people, explaining the problems to them.¹

When it happens that the two phonemic systems do not coincide at certain points or at many points, the problem is, of course, much greater. (We are ignoring those cases where Thai has phonemes which the minority language does not. In such cases, of course, they are simply ignored in the minority language writing system.) Where there are phonemes in the minority language which do not occur in Thai, a variety of solutions may have to be tested out, as was discussed in the previous section. In the first place, sometimes there are Thai symbols otherwise unused in the minority language which can be used with a different pronunciation from what they have in Thai. Thus <๓> is used in some minority languages for /ñ/. In Thai it stands today as one of the spellings for /y/ in initial position and /n/ in final position. The use of this symbol with a changed value lessens a certain amount of transfer value, but in this case arbitrariness is reduced by the fact that Myang (Northern Thai) and Isan (Northeastern Thai) still have this /ñ/ phoneme in many words like /ñŋ/ 'woman' spelled with <๓> in Thai. In Thai there are also several symbols which are extremely uncommon. These symbols have been used with new values at times in the writing systems described below.

When the languages being described here are non-tonal (see Lavüa' [Lawa, Lua'] and Mal [Thin], for example), the Thai system of marking tone by initial consonants (Appendix 2) is not necessary. High class consonants are therefore not to be associated with non-existent rising tone in such a writing system. Thai usage has to be changed also for some final consonants. Thai <๓> represents /l/ in initial position but /n/ in final position. Some of the languages being described have /l/ in final position, and for them <๓> represents /l/ both in initial and final position.

Another solution, of course, is the use of digraphs - that is, the use of more than one letter in combination for a single phoneme. There are many examples such as ng, ch, and th in English. Thai has digraphs and even trigraphs, for example, in the combination of the symbols <๓-> /ee/, <๓> /ii/ and <๓> /y/, together making <๓๓๓> /ia/. The Kuy (Suay) chapter shows the use of digraphs in new combinations to represent phonemes not existing in Thai, like <๓-๓> for Kuy /aa/ on the analogy

¹I am indebted to James A. Morris and Herbert C. Purnell for the formulation of procedure in this paragraph.

of Thai <๑-๑> /ə/ (compare Thai <๑-๑> /ee/ and <๑-๑> /εε/).

Another kind of helpful solution in many cases is the use of diacritic marks, extra symbols added to and modifying the basic symbols of the alphabet. French acute accents and grave accents (as in <é è>) are diacritic marks. Thai <' ~ ~ ~ ~ ~> can be thought of as such. Diacritics present several kinds of problems in that they are hard to teach, the newly literate tends to leave them off in writing, the people with poor eyesight have difficulty seeing them, and if they are too numerous they may make the page look very unlike the model language which is being emulated. As much as possible diacritics should be used as they are used in Thai for transfer value. Occasionally they provide useful solutions to other problems, however, as in the Lavüa' (Lawa, Lua') use of Thai <'> for preglottalisation rather than tone. In Mal (Thin) the tone system is very rudimentary and irregular. Filbeck therefore suggests using <'> for rising tones, and not adopting the Thai high class consonant tone system at all.

As the adaptations to the Thai writing system are made, it is extremely important to guard against ambiguity as much as possible. A case of ambiguity in the spelling of Thai is the theoretical possibility of <๑๑๑> representing two pronunciations: /sməə/ and /səeməə/. Not all ambiguity can be avoided in the minority languages because some is inherent in the Thai system. It should be kept to a minimum, however.

The second area of ambiguity to be guarded against is ambiguity in transfer. This is of less importance than internal ambiguity but it still must be watched if our purposes are to be accomplished. Ambiguity in transfer simply means that what is learned as the pronunciation of a symbol in the minority language may then be misleading in Thai when transfer is made because the sound correspondences of the two languages are not identical. To cite an example we have already used, in some of the languages described below /l r c/ and other consonants may occur in final position. Although <๑ ๑ ๑> (/l r c/ in initial position) occur as *letters* in final position in Thai, they there represent the sounds /n n t/. They are needed, however, to represent the final /l r c/ pronunciation in the minority languages, and thus do create an instance of ambiguous transfer. By watching for ambiguities it is often possible to modify them or eliminate them so that they do not become serious problems to learning or to transfer. At this point it is often a matter of minor adjustment, but sometimes the potential ambiguity will be a major factor in the decision.

Finally, the product which is now our writing system worked out with considerable effort and thought should be tested in use by national speakers. It should also be tested for the reaction of casual observers

like government officials and other influential individuals who do not actually know the minority language or use it.

If the writing system has been made with a really sensitive appreciation of the values of the native speakers of the language, they are not likely to refuse it. Yet there are cases where the language group has flatly turned down what would seem from the outside viewpoint to be the best for them. Much more common are the cases of apathy, where native speakers could not care less. So often, however, the apathy is related to the fact that the person who prepared the script has really not been alive to what the trends are and what people really want. At other times, native speakers have simply never been convinced of the value and significance of learning to read and write at all. Why bother? Until they are convinced, any writing system is abortive. Then again, a poorly designed writing system is so difficult to learn to use that people become discouraged.

The remainder of this book consists of individual papers taking up in detail the issues involved in the preparation of orthographies in ten different languages. The first two such papers (the remaining chapters in Part 1) highlight problems of writing languages which differ drastically from Thai. In the Northern Khmer case there is a very much more extensive vowel system than there is in Thai, and no tones. In the Hmong case there is a very much more complicated consonant system than there is in Thai, and more tones than Thai. Part 2 consists of papers by other authors, each with its own set of special problems in phonology and orthography preparation. In some cases conclusions are still tentative, but they are offered to anyone who may find them useful.

CHAPTER THREE

THE PROBLEM OF VOWELS: NORTHERN KHMER

WILLIAM A. SMALLEY

Orthography planning for Northern Khmer¹ exemplifies the principles which were discussed in the last chapter, with particular difficulty in the area of representing Northern Khmer vowels in Thai script. There are also complications arising from the fact that (1) Northern Khmer has many words which come from the same source as the Thai word with the same meaning but sound different from Thai; (2) Northern Khmer does not have the tone which is implicit in the Thai writing system; (3) it has a more complex syllable structure, which also poses problems to Thai writing; and (4) it has a larger number of syllable-final consonants than Thai.

Northern Khmer is the name I give to the sizeable Khmer-speaking population concentrated primarily in the provinces of Buri Ram, Surin, and Si Sa Ket, overlapping slightly into southern Ubon Ratcha Thani province on the east and Roi Et province in the north. Population estimates for this group run as high as 800,000, which makes them a very significant part of the population of the Northeast.

The existence of this Khmer-speaking population in Thailand is due to a centuries-long history of shifting borders between Thailand and Cambodia. The latest incident was the much publicised World Court trial which Cambodia won and by which she established jurisdiction over Phra Viharn, a group of monumental ruins built during the period of

¹The research reported in this chapter was aided by the use of recording equipment provided under Grant 1474 from the Wenner-Gren Foundation for Anthropological Research, provided to aid in linguistic analysis of Southeast Asian languages.

Khmer architectural and sculptural creativeness. Earlier, several provinces of Cambodia were ceded to Thailand during World War II when Thailand was nominally an ally of the Japanese, and then returned to Cambodia in 1946. Still earlier, some provinces had been won from Thailand by French pressure, and so on back into history.

Thailand's government, over the past few years, has been acting rather vigorously, and at points quite effectively, in a policy of assimilating the Khmer-speaking population through the introduction of Thai language and some Thai values in widespread elementary schools. Unlike many children of minority groups in the North, it is a rare child in Thailand's Northeast who is not in reach of a school to attend and who does not respond to the government's compulsion to attend four elementary grades. There are still many people, however, including many children, who are completely monolingual in Northern Khmer.

Thailand's policy is that of educating its minority people in the Thai language (Chapter 1). The communication lines and contacts of the Khmer-speaking people in Thailand lie with the Thai, not with Cambodia. The population along the border itself is sparse because of the ruggedness of the country. The population centres are farther north along the railroad.

At the same time, we hope that Thailand will keep its policy both realistic and humane. The spread of Thai language among the Khmer-speaking Thai will increase bilingualism, increase the ability of people to use more than one language. It will not, in the foreseeable future, replace Khmer. The Northern Khmer population is too dense, too homogeneous in many areas, too integrated for the Khmer language to disappear readily. What will happen is the spread of what is true of a city like Surin today. Surin is a Khmer-speaking city where almost everybody also speaks Thai. The language the outsider hears coming from the windows and backyards is Khmer. The language which people use to speak to this same outsider is Thai. With an increasing bilingualism this pattern will spread to more remote country areas. But we emphasise that the change is to multilingualism, not to loss of Khmer.

Because of this, youngsters coming to school for the first time will continue to know very little Thai. Educational methods for teaching a child a new language (Thai) should be different from teaching a child to read his own language. At the same time, the jump from Khmer to Thai is not an enormous jump, as languages go. A well-devised educational system should make it not too difficult a jump on a mass basis. For a child to be able to read and write his own Northern Khmer language in Thai script first would be a major boost to ultimate literacy in Thai.

The reasons for Northern Khmer orthography planning

In 1951 The Christian and Missionary Alliance Mission, with its Thailand headquarters at Korat, appointed Reverend and Mrs John Ellison as missionaries to live in Surin and work with Khmer-speaking peoples in the Northeast. Mr Ellison had spoken Standard Khmer from childhood as he was the son of missionaries in Cambodia. Mrs Ellison learned Khmer, and both of them learned Thai. As Mr Ellison travelled extensively through the whole area he found that he was able to use his Standard Khmer, but had to modify it considerably, for the speech of this area was somewhat different from that of Cambodia.

Virtually none of the Khmer-speaking people in Thailand are able to read the Khmer script. Those who can read, read Thai. The scripts are related but not identical. Furthermore, even if they could read the script there is a great deal of the language from Cambodia they cannot understand. They have a difficult time understanding Phnom Penh radio.

In 1964 I was asked by The Christian and Missionary Alliance to conduct an ethnolinguistic survey of the Northern-Khmer-speaking region to determine (1) how significant the difference in language was between Northern Khmer and Standard Khmer,¹ (2) the degree of multilingualism in the area, (3) the rapidity with which Thai language might be "taking over", and (4) the feasibility of writing Northern Khmer in Thai script. The results of this last point of study are presented here, modified by subsequent information.²

Orthography planning for Northern Khmer has gone through two phases. Phase I took place over a three-week period in early 1964. It involved the concentrated efforts of Leuam Thongkham (ເລຸ່ມ ທອງຄຳ), John Ellison, and myself. Leuam, a native speaker of Northern Khmer, is highly intelligent, with a good knowledge of Standard Thai, and had an unusual capacity to analyse his own language once he understood what we were doing. Ellison contributed his knowledge of Northern Khmer, Standard Khmer, and other background information, as well as making all arrangements. I supplied linguistic background and knowledge of orthography planning principles,³ as well as experience in the analysis of other

¹The present paper does not give a full phonological analysis of Northern Khmer, much less a comparison with the phonology of Standard Khmer and dialects in Cambodia. On the latter see Martini 1942-5 and Henderson 1952, culminating in Pinnow 1957. For recent publications on Standard Khmer grammar see Huffman 1967, 1970; Jacob 1967, 1968.

²A preliminary report on the other points was mimeographed as Smalley 1964a. The statistical work on the survey sample has not been completed. Other findings will be included in Smalley, forthcoming.

³Beulah Johnston (see Chapter 10) supplied some ideas for the writing of vowels on the basis of her experience with Kuy, a related language.

Mon-Khmer languages.

An orthography was developed as a result of Phase I efforts. In the years since then it has been tested by Ellison and modified by Kheuan Singkhnipha (เขื่อน สิงคณิภา), another very intelligent native speaker of Northern Khmer. Together they have prepared literacy materials and reading matter in the revised script. Their efforts we refer to as Phase II.

The analysis of the Northern Khmer sound system in this paper is sketchy and tentative, not as fully developed as that in most of the other papers in this volume. The presentation here is from the standpoint of orthography only. During the time available to me in Surin there was not the possibility of making a full analysis of the sound system. A large percentage of the orthographic suggestions made below will turn out to be valid. In some cases I know where the weaknesses of the data lie, and warn the reader. In other cases, future users may find that I was wrong and had insufficient data and knowledge of Northern Khmer to see the true structure at that point.

However, in spite of these provisos, the material in this chapter provides a system for writing Northern Khmer in Thai script, and one which is being checked through use. It shows that there is no theoretical reason in the linguistic structure of Northern Khmer why it cannot be written in Thai script, provided the bilingual user and the Thai who learns Northern Khmer are willing to make certain adaptations from normal Thai spelling conventions. In the course of this chapter I have spelled out what some of these adaptations might be, and the problems they present. Some of the original adaptations of Phase I have been modified in Phase II. However, it may well be that experimentation will show that there are still better adaptations to be made.

As far as the sound system of Northern Khmer is concerned, in this chapter it is presented strictly from the point of view of writing it practically in Thai script. This means, for example, that in this chapter the "aspirated stops" /ph th ch kh/ are treated as units because Thai has single symbols for them, although they really pattern as consonant clusters in the sound structure of Northern Khmer.

Single initial consonants

Figure 1 shows consonants which can occur as single consonants at the beginning of a Northern Khmer syllable. They are presented in two scripts. The one is a romanised phonemic script based on linguistic conventions, the other the Thai spelling. The chart is laid out according to a phonetic classification of the sounds, showing the sounds in relation to the way they are made in the mouth.

	Labial		Dental/ Alveolar		Palatal		Velar		Glottal	
Voiceless, unaspirated stops	p	ɸ	t	ต	c	จ	k	ก	ʔ	อ
Voiceless, aspirated stops	ph	ฟ	th	ท	ch	ช	kh	ค		
Voiced, implosive stops	b	ɓ	d	ด						
Nasals	m	ม	n	น	ɲ	ญ	ŋ	ง		
Fricatives			s	ส					h	ฮ
Lateral			l	ล						
Trill			r	ร						
Vocoids	w	ว			y	ย				

Figure 1. Northern Khmer single initial consonants

The pronunciation of Northern Khmer single initial consonants is usually close to the reading of the corresponding Thai symbol. The most difficult exception is <๗> /ñ/, which does not occur in modern standard Thai. <๗> in Thai is read as /y/ at the beginning of a syllable, and as /n/ at the end of a syllable. We are making the suggestion, however, that unlike Thai at this point, this symbol be used in Northern Khmer to represent /ñ/ wherever it occurs.

This Thai symbol is useful for Northern Khmer /ñ/ because Thai words written with it are often pronounced with /ñ/ in Lao (which many Northern Khmer speakers also know), for Lao still has the sound. Thus literate people in the Northern-Khmer-speaking area are somewhat used to the association between <๗> and /ñ/. Several other minority languages in Thailand also use this symbol for the sound. The sound is rare as an initial consonant in Northern Khmer, being much more common in final position.

The other initial Northern Khmer consonants all have Thai counterparts, although they are not necessarily pronounced identically to the Thai pronunciation. Northern Khmer /b d/, for example, are much more strongly implosive than their Thai counterparts, though some implosive quality is to be found in many speakers of Thai to varying degrees. In spite of this difference there will be no trouble identifying Thai /b/ with Northern Khmer /b/, etc. Northern Khmer /w/ tends to be made more like a [v] than in Bangkok Thai. A marked difference in pronunciation lies in the fact that Northern Khmer /r/ is sharply trilled.

Readers who know how to read Thai may wonder why we chose the Thai symbols we did for those sounds where Thai has more than one consonant

symbol. Thai, for example, has three symbols for /kh/: <ข ฃ ฅ>. The principles involved are as follows: (1) As much as possible the Northern Khmer symbols are drawn from middle class and low class consonants to avoid the problem of an "inherent rising tone". Since Northern Khmer is not a tonal language, and since we want to maintain as much transfer value as possible in the writing system from Northern Khmer to Thai, we avoid the high class consonants which govern the rising tone in Thai. Obviously not all problems of reading tone in Thai are thereby eliminated, but the transfer is simplified. On the basis of this principle, therefore, <ค> was chosen rather than <ข>. (2) When the sounds in the two languages are substantially equivalent we want to use the most common Thai symbol (subject to principle No. 1). This, too, helps the transfer to Thai. On the basis of this principle we chose <ค> rather than <ฃ>.

Initial consonant clusters

In the limited time available, I did not make a systematic study of all the possible combinations of consonants at the beginning of Northern Khmer syllables. The problem is complicated by the presence of "presyllables", very short, unstressed syllables in which the vowel is extremely short and glided over without a clear articulation. Thai has consonant clusters like /pɪ/ in /pɪaa/ ปลา 'fish'. It also has presyllables, as in /tʰahǎan/ ทหาร 'soldier'. These clusters and presyllables sometimes present problems in reading Thai, as for example in เสมอ 'equal, always', which actually represents the pronunciation /samǎə/, but which could theoretically be read /sǎemwə/ as well. They also present problems sometimes in Northern Khmer, even to a greater degree than Thai, because there are more occurrences of this kind of combination and a wider variety of such combinations in Northern Khmer than in Thai.

Consonant clusters or presyllables which already have counterparts in the Thai writing system are generally written as in Thai. New ones are done on the analogy of existing Thai practice.

1. We have to distinguish between three kinds of phenomena, both in Northern Khmer and in Thai, to handle this problem:

a. True consonant clusters are those combinations where there is no vowel whatsoever between the two consonants as they are pronounced. Examples in Thai include กล้า /klǎa/ 'to dare', and คำน /kʰwan/ 'smoke'. In Thai only the consonants /h l r w/ occur as the second consonant in a true cluster, and not all spellings with those consonants in sequence are true clusters. For example, ตลาด /tʰalǎat/ 'market' contains a very short vowel pronunciation between the first and second consonants.

Examples of true consonant clusters in Northern Khmer include <គស្ស> /khlañ/ 'grease', <ភឺត> /phlɨt/ 'bright'.

b. Open presyllables are those presyllables which do not have a consonant after the vowel in the presyllable. Presyllables are distinguished from true consonant clusters by the fact that they do (or may) have a short, unstressed vowel. I say *may* have because in a Thai word with a presyllable such as ตลาด /talàat/ sometimes in fast speech some speakers will eliminate or virtually eliminate the unstressed presyllable vowel from their pronunciation. This has no effect on the spelling in Thai. Sometimes the person wanting to write a word in Northern Khmer is not sure whether he hears a short vowel in there or not. This also has no effect on the writing.

Other examples of open presyllables in Thai include សំបាយ /sabaay/ 'comfortable, convenient', เฉพาะ /chaphá?/ 'especially for', พม่า /phamáa/ 'Burma', ประมาณ /pramaan/ 'about'. In this last example note that the first syllable is an open presyllable although it begins with a true consonant cluster in itself. All of these examples in Thai are open presyllables in their normal pronunciation, as indicated above. In an artificially precise or "reading" pronunciation they may become closed presyllables, as /prá?maan/, etc.

Examples of open presyllables in Northern Khmer include <ឆ្នាំ> /chanam/ 'year', <ໄທ> /thaay/ 'sun', <ក្បាល> /kabaal/ 'head', <ស៊ីង> /satɨŋ/ 'stream'.

c. Closed presyllables are presyllables in which there is a consonant after the unstressed vowel, at the end of the presyllable. This means that the final consonant of the presyllable directly precedes the initial consonant of the main syllable. The vowel of the closed presyllable ranges from weak and unstressed to virtually non-existent in Thai, whereas in Northern Khmer sometimes it is actually non-existent, the slight syllable beat of the presyllable actually coming on the final consonant of the presyllable. For example, /?ancuun/ is often heard as /ncuun/ 'send'.

Examples of closed presyllables in Thai include สำคัญ /sǎmkhan/ 'important', วันจันทร์ /wancan/ 'Monday'.

Examples of closed presyllables in Northern Khmer include <ត្រង់> /tanlɛɛ/ 'sea', <ប្រូត> /panlua?/ 'sprout'. Some words may be heard fluctuating between open and closed presyllables. I have noticed this particularly when the second consonant of the presyllable is /r/. For example, I hear /carmoh/ and /cramoh/. The latter seems to be the more deliberate pronunciation in such cases, and the native speakers prefer the latter spelling <ຈຣະສີວ>.

2. All Northern Khmer true consonant clusters (especially those which correspond with true consonant clusters in Thai) are written with the consonants adjacent, without any intervening vowel symbol. For example, Northern Khmer /phlɛɛ/ 'fruit' is written <ឃ្លាត> in spite of the potential ambiguity with the pronunciation /phɛɛl/, because this is the Thai way of writing this kind of sequence. However, where the cluster does not occur in Thai, native speakers fluctuate. <ឃ្លាត> /srɛɛ/ 'rice-field' could be read as /sɛr/, leading to a preference for the spelling <ឃ្លាត>, which is a little less Thai-like.

3. Open presyllables should be written in this same way whenever there is no possibility of ambiguity because of the placing of the vowel symbol, or when there is no conflicting word with which such a spelling would be ambiguous. Otherwise they should be written with <ə>, or the consonant of the presyllable should be written before any vowel symbols which may precede the initial consonant of the stressed syllable.

For example, Northern Khmer /caʔar/ 'sharp' should be written <ឡាត> because there is no ambiguity, no other way of reading the word than the correct way. However, /pasɛɛŋ/ 'smoke' presents more of a problem. Should it be written <ឃ្លាត> or <ឃ្លាត> or <ឃ្លាត>? According to this principle it should be written as one of the latter two because the first form might be read as /pɛɛsoŋ/. Between the latter two, native speakers fluctuate in preference because both are Thai patterns and both present difficulty to the reader.

4. Closed presyllables are generally written with <ə>. For example, Northern Khmer /ʔannaat/ 'tongue', is written <ឡាត>, /kantɿŋ/ 'swelling, protrusion' as <ឡាត>. However, syllables closed with /r/ (like /partɿh/ 'country' or /tarɿc/ 'ear') were preferred written as <ឡាត> /pra-/ by native speakers, as already indicated.

5. The above principles have been worked out on the hypothesis that there is no important distinction between vowels in true presyllables in Northern Khmer, that distinctions which we can hear sometimes in presyllables are due to the influence of surrounding sounds. This hypothesis is not proven, and needs a lot of testing. According to this hypothesis, when you get a clearly contrastive vowel in the first syllable of a two-syllable word it is due to the word being a compound, or to the first syllable being phonemically long. For example, according to this hypothesis, /matlaɿlɿŋ/ 'completely bald' does not have a presyllable as its first syllable, but rather a full syllable which is passed over lightly because of its position in the stress pattern <ឡាត>. The /la/, however, is a presyllable. The sequence /meenteen/ 'true' is sometimes pronounced so that the first syllable sounds like a presyllable, but it turns about to be the above when slowed down, or

said more deliberately. It should therefore be written <เม่นเตน>.

A word like [cɪkɛɛ] 'dog' (as it is actually pronounced) we assume, under this hypothesis, to be phonemically /cakɛɛ/, with a regular pre-syllable, which should be written <จก> or <ຈະກ> based on the principles above.

This hypothesis may turn out to be false. It may be that there is some significant vowel difference in presyllables. If so, the spelling of some words may have to be altered. The decision should be based partly on linguistic considerations, and partly on the reactions of bilinguals.

Because my knowledge of Northern Khmer is not very great I have doubtless been inconsistent in the spelling of presyllables in this paper, but these spellings follow reactions of native speakers so far as presyllables are concerned. The inconsistencies are inherent in the Thai system, and great care will be needed in developing this aspect of the spelling so that some measure of standardisation emerges.

Since this is a difficult part of the Northern Khmer phonology to spell in Thai script, some further observations on native speaker preferences may be useful. Note, for example, that the native speaker preferred to spell words like /kadeɛ/ 'pinch off' as <เก็ดจ>, but /kameeñ/ 'child' as <นเมญ>. In the one case the vowel is placed before both the presyllable and the initial consonant of the main syllable, and in the other case it is placed between them. The reason is that because the short vowel has <๕> to mark the initial consonant of the main syllable, the spelling <เก็ดจ> is unambiguous. But because the long /ee/ does not have an accompanying <๕>, to have spelled /kameeñ/ as <นเมญ> would have been ambiguous, as it would be possible to read it as /keemoñ/. On the other hand, for /samʌʌ/ 'smooth', the native speaker at one stage preferred <สมม>, which could easily be read as /seemoʊ/, doubtless because of the cognate word (word with similar sound and same meaning) in Thai เสม, which is also ambiguous as to its spelling. Later he was not so sure, asking for <สมม>.

Final consonants

Figure 2 shows final consonants occurring in Northern Khmer syllables. The Thai symbols give the normal suggested spelling. As in Thai, however, some special symbols are used for certain combinations of vowel and final consonant. These are handled under "Other Thai spelling conventions" later on in this chapter.

Figure 2 overleaf

p	ប	t	ត	c	ឆ	k/?	ក/្រ
m	ម	n	ន	ណ	ញ	ញ	ង
						h	អ
		l	ល				
		r	រ				
w	វ			y	យ		

Figure 2. Northern Khmer final consonants

It must be emphasised here that although some of the Thai consonant symbols used in writing Northern Khmer final consonants will be read as they are in Thai, others will not!

<ឆ> will be read as /c/, not as /t/: <ឆប> /carbac/ or /crabac/ 'squeeze'

<អ> will be read with an audible /h/: <អ័> /cah/ 'old'

<ល> will be read as /l/, not as /n/: <លាណ> /kanaal/ 'middle'

<រ> will be read as /r/, not as /n/: <រា> /kaar/ 'work'

<ញ> will be read as /ñ/, not as /n/: <បាញ> /bañ/ 'shoot'

The reason for these differences from the Thai system is that Thai does not have these *sounds* /c ñ h l r/ in final position, but Northern Khmer does, and must have symbols for representing them.

The differences from Thai will not bother a Northern-Khmer-speaking person for long, as he knows how to pronounce the words, and soon will get used to the fact that the spelling in Northern Khmer is more consistent than in Thai. Words like <រា> 'work, act' will be spelled the same way in Thai and Northern Khmer, although pronounced with a final /n/ in Thai and /r/ in Northern Khmer. However, some other words may cause some confusion, as they will not work out so neatly. See the section on Thai spelling pressures later in this chapter.

As the writing system was being developed in Phase I, the reaction of the native speaker to these final consonant symbols used with different values than in Thai was very interesting. The use of final <អ រ> seemed to bother him not at all. <អ> /h/ took him a little while to get used to. <ឆ> /c/ and <ញ> /ñ/ he rejected when they were first suggested, substituting <ក> (Thai /k/) and <ង> (Thai /ŋ/). I made absolutely no effort to dissuade him, thinking at the time that perhaps the distribution of these consonants might make it possible to write them as he suggested, but once he had an hour or two of experience in writing Northern Khmer in Thai script he changed all of these finals back to <ឆ> and <ញ>, and was quite emphatic that this was what they were!

Final [k] and [ʔ] do not contrast in final position so far as my data go. [ʔ] comes after /aa ɨ oo aa ia ya ua wa w a ʌ o ɔ a/. [k] comes after a completely different set of vowels, /əə ʌʌ uu ʊʊ ɔɔ ɨ u/. There is indication of some differences between speakers on this. Both of these sounds should be spelled as closely as possible to the Thai, however, which means that they should be spelled in a variety of ways. When the vowel in the syllable is short the final /ʔ/ can be spelled as in Thai, sometimes with <ɿ>, and sometimes without any symbol, a short vowel symbol such as <ɿ> or <ɿ> indicating usually a final /ʔ/ (but not always, so that it is ambiguous). However, unlike Thai, Northern Khmer has [ʔ] after long vowels. At this point the lack of contrast in final position between [k] and [ʔ] becomes useful, as [ʔ] after long vowels can be written with <ŋ> (Thai /k/). Thus /daaʔ/ 'pull out' can be written <ŋan>. However, there has been some tendency in Phase II to spell with <ɿ> even after a long vowel, as in <ŋaɿ>.

Vowels

Like Thai, Northern Khmer has a distinction between long and short vowels.¹ We will take the long vowels first to illustrate the problem of the differences between the two languages in their vowel systems. In Figure 3 the Thai long vowels are organised according to their phonetic characteristics, followed by the Northern Khmer long vowels organised in parallel fashion. A comparison of the two sets of vowels illustrates the problem. In this first Northern Khmer vowel chart, Thai symbols are indicated only for those sounds for which there is a readily available Thai spelling. The remainder present the "problem". Examples of words showing all vowels of Northern Khmer will be found listed systematically later in the chapter.

Figure 3 overleaf

¹Standard Khmer like many other Mon-Khmer languages has been analysed as having two registers of consonants which have a modifying effect on vowel pronunciation (see Henderson 1952 and Pinnow 1957). It is possible that further study would indicate that the description of Northern Khmer vowels would be simpler with such an analysis. However, I would like to mention here for the record that I found no evidence of any breathiness, laryngialisation, faucalisation, pitch or any of the other phonetic characteristics normally associated with register in Mon-Khmer languages, and my impression was confirmed by Beulah Johnston, who is a fluent speaker of Kuy (Chapter 10), a neighbouring and related language where register distinctions clearly do occur.

ii	๒	++	๒/๒๑	uu	๓	ii	๒	++	๒๑/๒๑	uu	๓
						ll		ee		uu	
ee	๒-	ee	๒/๒-๑	oo	๓-	ee	๒-	γγ	๒/๒-๑	oo	๓-
εε	๒-	aa	๒	cc	๒-๑	εε	๒-	λλ		cc	๒-๑
						aa	๒			aa	

Thai long vowels

Northern Khmer long vowels

Figure 3

In the Thai symbol equivalents above, symbols before the / indicate symbols used when the vowel is followed by a consonant (in general, with some exceptions), and those after the / indicate the symbol as used for the vowel in syllable-final position. The exceptions have to do with special spellings for certain phoneme combinations, and those necessary for Northern Khmer will be taken up later in this chapter in the section on "Other Thai spelling conventions". The symbols used in the charts are enough to identify the vowels for people who read Thai.

One detail of the Northern Khmer chart may strike the reader as a mistake if he knows Thai. The Thai alphabet equivalences for /++/ are given as <๒๑/๒๑>, which in Thai represent /+a ++/ (with /+a/ short). The reason for this lies in the Northern Khmer phonology. The situation may be seen by looking at Column F in the lists of Northern Khmer words later in this chapter. The first three words in that column contain the vowel [++] and are spelled with the corresponding Thai symbol <๒๑>. This pronunciation, however, does not occur when a consonant follows. A short [+a] occurs instead. Short /+a/ in Thai is written with <๒๑>. Even though [++] and [+a] in Northern Khmer are the same phoneme, they have to be written differently, in the Thai manner. No Northern Khmer literate in Thai would accept anything else.

Even in the implied equivalences of the chart above there are some problems. Because Northern Khmer has more vowels than Thai, speakers of Northern Khmer literate in Thai are inclined to identify more than one Northern Khmer vowel sound with the same Thai vowel symbol. They tend, for example, to write at least two sounds /γγ λλ/ as <๒/๒-๑> (Thai symbol for /ee/) because this is the nearest Thai equivalent for all of them. Similar confusions occur with /ii ll/, /uu uu/ and /cc aa/. On the other hand, they are also inclined to feel that the Thai symbol is not completely right for their sound because the Thai pronunciation is different from theirs. A Northern Khmer phoneme, furthermore, may sound like the Thai adjacent to certain consonants, but not so much

like the Thai sound in other environments.

In looking for suitable Thai-based symbols to use for the Northern Khmer vowels which do not have equivalents indicated in Figure 3, we turn first for ideas to the neighbouring Kuy language (Chapter 10), which is closely related to Northern Khmer and shares some of its problems, but not all of them (having some peculiarities of its own as well). Parallel to what was done in Kuy, for Northern Khmer / $\Lambda\Lambda$ / we write < $\text{u}^\text{=}$ / $\text{u}-\text{a}$ >, a new symbol constructed on the pattern of Thai < $\text{u}^\text{=}$ / $\text{u}-\text{a}$ >. The native speakers of Northern Khmer at first find this combination very strange, but soon pick it up and use it consistently, except in words cognate with Thai where they sometimes tend to use Thai spellings.

Kuy had a solution for / aa / as well, but we chose not to use it as it is potentially more ambiguous than the solution we adopted.

This leaves us with four long vowels for which we do not yet have a transcription: / $\text{u}^\text{=}$ ee uu aa /. Here we must distinguish between Phase I (the originally proposed orthography for Northern Khmer) and Phase II (that which resulted after experimentation and several years of use). Both Phase I and Phase II solutions were novel, not existing in normal Thai writing conventions, but it is interesting to see that Phase II is more acceptable to Northern Khmer speakers because it better fits in with the total Thai system.

In the Phase I solution (which was later rejected) we worked from the fact that Thai has a symbol < ~ > which is used to indicate that a consonant at the end of a syllable does not correspond to any sound in the pronunciation of the word. The consonant is "silent". It is used in transliterating borrowed words. We therefore suggested the following transcription for the four vowels:

$\text{u}^\text{=}$ < $\text{~}-\text{u}^\text{=}$ / $\text{~}-\text{u}^\text{=}$ > ee < $\text{~}-\text{e}$ / $\text{~}-\text{e}$ > uu < $\text{~}-\text{u}$ / $\text{~}-\text{u}$ > aa < $\text{~}-\text{a}$ / $\text{~}-\text{a}$ >

Here are some examples of what some words with these vowels looked like: < $\text{~}-\text{u}^\text{=}$ > / $\text{k}^\text{u}^\text{=}$ / 'he', < $\text{~}-\text{e}$ > / k^e / 'flick off, scratch off', < $\text{~}-\text{u}$ > / c^u / 'believe', < $\text{~}-\text{u}$ > / c^u / 'evil', < $\text{~}-\text{a}$ > / lap^u / 'guava', < $\text{~}-\text{a}$ > / tham^a / 'stone', < $\text{~}-\text{a}$ > / tas^a / 'post'. The reader would have had to learn that combinations like < $\text{~}-\text{u}$ > represent a single sound just as < ~ > does, in the same way that the Thai reader has to learn that < ~ > represents a single sound just as < ~ > and < ~ > do.

These proposals turned out to be completely unacceptable, however, as Phase II experimentation got under way. Possibly the proposed spelling put too much load on the final part of the written syllable, whereas Thai writes its major distinctions on the initial part of the syllable. Certainly it involved conventions which are foreign to Thai. The Phase II solution which won out placed the visual distinctiveness

on the initial consonant, where it belonged. Figure 4 compares the Phase II solutions with the rejected Phase I suggestions.

กึย	/kɯɛ/	กึ
กึรย	/kɯɛr/	กึร
คึอ	/cəə/	คึอ
ยึง	/yəəŋ/	ยึง
อึว	/cʊʊ/	อึว
ลปุตว	/lapʊʊt/	ลปุต
ทมอธ	/thaməə/	ทมอ
ตชอธ	/tasəə/	ตชอ
Phase I		Phase II

Figure 4

In other words, the Phase II solution was

กึ <๕> คอ <๕-๕> อว <๕> ออ <๕>

That is, it takes the symbols for /ll ɣɣ ɔɔ/ and adds a dot under the immediately preceding consonant; it takes the symbol for /uu/ and adds a small circle over the consonant. Both <๕> are available in Thai type fonts, the former being used in dictionaries for phonetic purposes and in writing the sacred language Pali in Thai script, and the latter as part of a composite symbol <๕>. <๕> rather than <๕> is used with <๕> so that the two symbols do not occupy the same space in the syllable configuration.

In the case of /əə/ it is possible to reduce the number of times the <๕> needs to be written, because of the limited occurrence of <๕> for /++/ (pronounced [tə] and written <๕> in closed syllables, as discussed above). As may be seen in Column G below, the first three words have the vowel in open syllables, in final position. Thus the vowel contrasts with the vowels of Columns F and H. However, because of the characteristics of the vowel of Column F already described above, the remainder of the words in Column G do not contrast *visually* with counterparts in Column F. Because the spelling of Thai /tə/ was used for these words, it leaves the spelling of Thai /++/ available for the remainder of the words in Column G, making the <๕> unnecessary. In other words, Northern Khmer speakers will tend to identify both /++/ and /əə/ with Thai /tə/. Where the Northern Khmer sounds contrast, we can keep them apart with the use of <๕>. Where they do not, this can be left off. If it is written for consistency, no harm is done, of course.

This then gives us a complete chart of long vowel equivalences, as in Figure 5:

ii	ᵢ	++	ᵢᵢᵒ- / ᵢᵒ	uu	ᵘ
ee	ᵉ	ee	ᵉᵉ- / ᵉᵒ	oo	ᵒ
ee	ᵉ-	γγ	ᵉᵉ / ᵉᵒ	oo	ᵒ-
εε	ᵘ-	λλ	ᵘᵘ / ᵘᵒ	cc	-ᵒ
aa	-ᵗ			aa	-ᵒ

Figure 5. Northern Khmer long vowels as written in Phase II

Short vowels

Short vowels in our data in Northern Khmer are one fewer in number than the long vowels, as in Figure 6. Otherwise the symbolisations suggest themselves on the analogy of the above.

i	ᵢ	+	ᵢ	u	ᵘ
e	ᵉ			o	ᵒ
e	ᵉᵢ / ᵉᵉ	γ	ᵉᵉ / ᵉᵒᵉ	o	-- / ᵒᵉ
ε	ᵘᵢ / ᵘᵉ	λ	ᵘᵉ / ᵘᵒᵉ	c	ᵒᵒ / ᵉ-ᵗᵉ
a	ᵉ- / -ᵉ			a	ᵒᵒ / ᵉ-ᵗᵉ

Figure 6. Northern Khmer short vowels (Phase II)

In Figure 6, Thai script symbols before the / represent medial position in the syllable (except before [ʔ], while those after the / represent either final position, or vowel plus [ʔ]. There is ambiguity in the Thai script at this point, and the ambiguity is carried over into Northern Khmer writing. Also, the Thai script symbols for Northern Khmer /γ λ c a/ include <ᵉ>, which is not commonly used in Thai with these combinations of symbols, but is normally used on the symbols for /e ε/ to represent shortness. We have extended its use here in Northern Khmer as the Thai system is ambiguous between long and short vowels at this point.

Vowel combinations

In this section we are not dealing with combinations of vowel plus final /w y/, which are sometimes thought of as vowels in Thai, but rather with the Northern Khmer sounds of the type of Thai /la/ <ᵉᵘ>,

/t̪a/ <ᵐᵇᵐ>, /ua/ <-ᵐ-/ᵐᵇᵐ>. These are summarised in Figure 7.

ia	<ᵐᵇᵐ>	ua	<-ᵐ-/ᵐᵇᵐ>
ya	<ᵐᵇᵐ/ᵐᵇᵐᵐ>	wa	<ᵐᵇᵐ-/ᵐᵇᵐᵐ>

Figure 7. Northern Khmer long and short glides

Phonetically, I hear [ia ua], which are very much like Thai and which are written <ᵐᵇᵐ, -ᵐ-/ᵐᵇᵐ>. I also hear an [t̪a] which sounds very much like Thai /t̪a/ (but shorter). It, however, has been analysed above as belonging to the same phoneme as /t̪t̪/ in Northern Khmer. [t̪a] is the pronunciation of /t̪t̪/ when followed by a consonant in the same syllable. I have therefore listed it under /t̪t̪/ in the charts of examples. The reason for my thinking is that I do not have any words with /t̪t̪/ followed by a consonant, nor any in which /t̪a/ is not followed by a consonant. Additional data could prove the hypothesis false. But in any case the Thai symbolisation of <ᵐᵇᵐ> /t̪a/ should be used. The native speakers insisted on <ᵐᵇᵐ> as well, although it is not necessary here from the linguistic standpoint.

Two additional sequences are a very short [ua] or [wa] and [ia] or [ya]. The vowel in Northern Khmer <ᵐᵇᵐᵐᵐᵐ> [panlua?] 'sprout' sounds very much like the corresponding Thai /ua/. However, Northern Khmer <ᵐᵇᵐᵐᵐ> [lwa?] 'sleep', is much shorter. In this latter group of words (see Columns Q, R) the peak of the syllable is on the /a/ when the syllable is closed by /n ɲ/ but on the /w/ in the other examples. The system of writing takes care of the problem for us, with [?] spelled with <ᵐ> (Thai /k/) after the long vowel, and with <ᵐᵐ> after the short. <ᵐᵐ> is used for the short vowel with other finals, as indicated above. Columns O and P show the parallel situation for long and short /ia ya/.

Vowels before /c ɲ/

A word like /khlaac/ 'fear', or /sadeɛɲ/ 'show', has a phonetic [ɣ] audible between the vowel and the /c ɲ/. The words sound like [khlaayc], [sadeɛyɲ]. This [ɣ] is clearly audible before these consonants with all vowels except /i ɪ ɛ ʌ/ where it may or may not be heard to varying degrees. This [ɣ] does not have to be written. It is automatically conditioned by the presence of final /ɲ c/. We therefore write <ᵐᵇᵐᵐᵐ> and <ᵐᵇᵐᵐᵐᵐ>. Many more examples will be found in the lists and text later on.

Other Thai spelling conventions

In addition to the Thai-based spellings above, there are other regular spellings used in Thai for certain combinations of vowels and consonants. The ones which are used in Northern Khmer are those which are extremely common, and the ignoring of which would seem unnatural from a Thai spelling standpoint. Where Thai has alternative spellings which are not so common, the less regular spelling does not need to be used.

<๖> is used instead of <๖๓> for /am/.

<๖- > is used instead of <๖๓> for /ay/, but not for /aay/.

<๖-๖> is used for /aw/.

<๖-๖> is used instead of <๖๓> for /γγγ/, and (by analogy) <๖-๖> is used instead of <๖๓> for /λλλ/.

Thai spelling pressures

An additional very practical problem which arises because of the reaction of bilinguals who can read and write Thai, is to be found in the words which are identical or nearly identical in Northern Khmer and Thai, but where following the Northern Khmer spelling rules consistently brings a spelling different from the Thai spelling of the same words.

This difference is caused by many factors including the Thai tonal system which requires a variety of consonant symbols for the same consonant sound, the fact that many Thai words are spelled in the way they were formerly pronounced rather than in the way they are pronounced now, that others are spelled in imitation of the way they are spelled in languages from which they are borrowed rather than the way they are pronounced in Thai.

Here are some examples of the difference:

Thai	English	Northern Khmer
เนน /neen/	'apprentice in wat'	นูน /nɔɔn/
ห้าม /hâam/	'forbid'	ฮาม /haam/
อาหาร /ʔahǎan/	'food'	อหาร /ʔahaar/
หรือ /rɔ̃t/	'or'	รือ /rɔ̃t/
เกิด /kəet/	'be born'	แกต /kʌt/
เริ่ม /rɔ̃m/	'begin'	เริม /rɔ̃m/
รอบ /rɔ̃p/	'around'	รือบ /rɔ̃p/
ช้อน /chɔ̃n/	'spoon'	ชูน /chaan/
กอง /kɔ̃ŋ/	'pile, group'	กูน /kaan/

There are literally hundreds of such words, including borrowed words, proper names, etc. Here we have a definite problem of conflict of

principles. We want the writing system to represent what people say as simply as possible. Literacy will be very much more difficult if there are a lot of irregular spellings from the Northern Khmer language standpoint. We want, also, to provide a bridge to Thai, and this is what the Northern Khmer speakers want, too. Having the same spelling for words which sound the same in the two languages (or nearly the same) is a kind of bridge. Decisions in this area are very delicate, but for the most part consistency of spelling Northern Khmer is winning out.

Dialect

There are some pronunciation differences over the Northern Khmer-speaking area of Thailand. So far as writing Northern Khmer in Thai script is concerned, and as a base for the preparation of Northern Khmer literature, the Surin dialect is followed. The reasons are largely cultural and geographic, having to do with population distribution, rather than being linguistic. Surin is the only provincial centre in the solid-core Northern Khmer area, and the most important one in the total Northern Khmer area. Political, economic, geographical, and population considerations outweigh any contrary linguistic ones which we might not have noticed.

Examples listed by vowel quality

In the process of making the above analysis in Surin I made some lists of words which seemed to have the same vowel, one list for each vowel. These by no means include all the words in my data, but are representative and are helpful to identify the quality associated with each suggested transcription. The lists may also be used to see at a glance just what kinds of distributions of vowels with final consonants have been recorded so far, and as further work progresses some of the missing contrasts can be filled in. There are some inconsistencies in the spelling of Northern Khmer presyllables, and some other discrepancies in the lists as has been indicated above.

FRONT VOWELS - LONG

Column A: /i:/

sii	ជី	<i>eat</i>
patii	ປັ	<i>spinach</i>
ciic	ឆិ	<i>dig</i>
riic	រិ	<i>swell</i>

Column A: /ii/ (cont.)

riiñ	รีย	<i>dry</i>
mat laliiñ	มี้อดล=ลีย	<i>all gone</i>
piir	ปีย	<i>two</i>
kaciir	กัร	<i>mint</i>

Column B: /ee/

kie	เกีย	<i>he</i>
tanlee	ตันลีย	<i>sea</i>
leep	ลีย	<i>swallow</i>
kriip	กรีย	<i>gritty</i>
biet	บีย	<i>near</i>
tiit	ตีย	<i>more</i>
miec	มีย	<i>sky</i>
tarciee	ตาระรีย	<i>ear</i>
triim	ตริ้ม	<i>prepare</i>
sieem	ซึ้ม	<i>Thai</i>
nieen	นียน	<i>apprentice in wat</i>
pwahwieen	ปวอฮฺน	<i>intestine</i>
phleeñ	หฺลีย	<i>rain</i>
caŋkleeñ	จ้งกฺลีย	<i>lamp</i>
mamleeñ	มมฺลีย	<i>hair</i>
partleeñ	ปะระรีย	<i>country</i>
?lee	ลีย	<i>be bashful</i>
kantlee	กันตฺลีย	<i>mat</i>
hiir	หฺรีย	<i>overflow</i>
kieer	เกีย	<i>flick off</i>
khlee	หฺลีย	<i>green</i>
mlee	มฺลีย	<i>cat</i>

Column C: /ee/

tee	เต	<i>no</i>
papee	ปเป	<i>goat</i>
ceep	เจบ	<i>suck</i>
keep	เกบ	<i>mouse trap</i>
theet	เทต	<i>cloth</i>
kakeet	กเกต	<i>rub against</i>
ceec	เจจ	<i>banana</i>
deec	เดจ	<i>lie down</i>
meen	เมน	<i>true</i>
meen teen	เมนเตน	<i>truly</i>
chweeñ	เชวญ	<i>left side</i>

Column C: /ee/ (cont.)

kameeñ	กเมญ	<i>child</i>
taceeh	ตเจอ	<i>stubborn</i>
ceeh	เจอ	<i>thread</i>
deer	เดอ	<i>sew</i>
taseer	ตเชอ	<i>write</i>
leew	เลอ	<i>button</i>
heew	เฮอ	<i>chasm</i>

Column D: /ee/

sree	ชแร	<i>ricefield</i>
khée	แค	<i>month</i>
cakee	จแก	<i>dog</i>
?aŋkeep	ฮังแกบ	<i>frog</i>
ka?eep	กแอบ	<i>centipede</i>
ca?eet	จแอต	<i>satisfied (of food)</i>
heet	แฮต	<i>reason</i>
deec	แดจ	<i>iron</i>
beec	แบจ	<i>shatter</i>
theem	แทม	<i>added</i>
pa?eem	ปแอม	<i>sweet</i>
?een	แอน	<i>to curve, bend</i>
seen	แซน	<i>to offer to spirits, marry</i>
sadeeñ	ชแดญ	<i>show</i>
paseeñ	ปแชญ	<i>smoke</i>
parheeh	ประแฮอ	<i>careless</i>
seeh	แฮอ	<i>horse</i>
heel	แฮล	<i>to swim</i>
baan deel	บอานแดล	<i>same place</i>
ceer	แจร	<i>tusk of boar</i>
khameer	คเมอ	<i>Cambodian</i>
keew	แกว	<i>a glass</i>
ceew	แจว	<i>to row a boat</i>

Column E: /aa/

khlaa	คลา	<i>tiger</i>
ranaa	รนา	<i>who</i>
taa	ตา	<i>grandfather</i>
salaap	ชลาบ	<i>wing</i>
kaap	กาบ	<i>cut</i>
baat	บาต	<i>yes</i>
?annaat	ฮันนาต	<i>tongue</i>

Column E: /aa/ (cont.)

khlaac	กลัว	<i>fear</i>
saac	ซำ	<i>to splash someone</i>
yaa?	ยาก	<i>difficult</i>
pabaa?	ปบยาก	<i>difficult</i>
haam	ห้าม	<i>forbid</i>
taam	ตาม	<i>follow</i>
caraan	จรราน	<i>push</i>
baan	บาน	<i>be able</i>
kaduung kadaang	กตุงกต่าง	<i>noisy</i>
yaaŋ	ยาง	<i>kind</i>
karbaah	กำบ่อ	<i>cotton</i>
kardaah	กำด่อ	<i>paper</i>
kanaal	กนาล	<i>middle</i>
kabaaI	กบาล	<i>head</i>
kaar	การ	<i>work</i>
?ahaar	อาหาร	<i>food</i>
daaw	ด้าว	<i>saber</i>
raaw	ราว	<i>about</i>
chaŋaay	ชงาย	<i>far</i>
pakaay	ปักาย	<i>star</i>

CENTRAL VOWELS - LONG

Column F: /++/

l++	ลือ	<i>hear</i>
k++	กือ	<i>that is</i>
ch++	ชือ	<i>hurt, sick</i>
[kr+ap]	เกรือบ	<i>seed</i>
[ŋ+ap]	เงือบ	<i>die</i>
[m+at]	เมือต	<i>mouth</i>
[k+at]	เกือต	<i>you</i>
[l+at]	เลือต	<i>lift up trouser legs</i>
[k+a?]	เกือก	<i>moccasins</i>
[p+am]	เปือม	<i>carry in mouth</i>
[k+am]	เคือม	<i>eat</i>
[m+an]	เมือน	<i>chicken</i>
[kr+an]	เกรือน	<i>better (of an illness)</i>
[t+al]	เตือล	<i>a tuber</i>
[sak+al]	สเกือล	<i>be acquainted with</i>
[c+ar]	เชือร	<i>pitch of tree</i>
[kat+ar]	กเตือร	<i>to jar, shake</i>

Column F: /t+/ (cont.)

[ran+ah]	ร ^ร เฝืออ	<i>harrow</i>
[k+ah]	เฝืออ	<i>pry off</i>

Column G: /əə/

məə	มื่อ	<i>look at</i>
cəə	ซื่อ	<i>believe</i>
?iləə	ฮื่อ	<i>on top</i>
ŋəəp	งื่อ	<i>turn head up</i>
lələəp	ละลื่อ	<i>shiny surface</i>
cantəət	คั่นตื่อ	<i>walk on tiptoe, stretch up</i>
ŋaŋəət	งะงื่อ	<i>uneasy, fearful</i>
ləək	ลื่อ	<i>lift</i>
?aŋkəək	ฮังกื่อ	<i>swaying in wind</i>
məəm	มื่อ	<i>tuber</i>
krəəm	กรื่อ	<i>coarse (of granules or powder)</i>
ləən	ลื่อ	<i>fast</i>
təən	ตื่อ	<i>remind</i>
?anceəəñ	ฮั่นเชื่อ	<i>invite</i>
cəəŋ	ซื่อ	<i>leg</i>
yəəŋ	ยื่อ	<i>we</i>
prəəl	ปรื่อ	<i>pleasure-seeking</i>
rəəh	รื่อ	<i>choose</i>
ləəh	ลื่อ	<i>more than</i>
nəəy	นื่อ	<i>tired</i>
rəəy	รื่อ	<i>frequently</i>

Column H: /yy/

thyy	เทอ	<i>do</i>
chyy	เชอ	<i>wood</i>
syyp	เซื่อ	<i>investigate</i>
ryym	เรื่อ	<i>begin</i>
khyyñ	เคื่อ	<i>see</i>
tampeec rahyyI	ต่าเปจระฮื่อ	<i>complete baldness</i>
kantyyI	กั่นตื่อ	<i>protrusion</i>
wyyy	เวอ	<i>an interjection for calling someone</i>

Column I: /aa/

baa	แบอ	<i>if</i>
samaa	แซ่มอ	<i>smooth, level</i>

Column I: /ʌʌ/ (cont.)

kʌʌp	แก๊บ	scoop out
tanʌʌp	ตแน๊บ	glutinous rice
kʌʌt	แก๊ต	be born
?ʌʌt	แ๊ต	to crane the neck and look
saŋkʌʌc	ซังแกจ	bedbug
sʌʌc	แซจ	laugh
bʌʌk	แบก	open
?annʌʌk	อันแนก	turtle
?ansʌʌm	อันแนม	dew
sʌʌm	แหมม	wet
caŋʌʌn	จแรรน	much
lʰat saŋkʌʌʌñ	เลื้อตซังแกญ	a gesture of hiking up trouser legs or skirt
sadʌʌŋ	ซัดแตง	thin
lʌʌŋ	แลง	rise
sarmʌʌl	ซัรแมล	chicken lice
paʔʌʌl	ปแฮล	be startled
hʌʌr	แฮร์	fly
dʌʌr	แดร์	walk
kʌʌy	แกย	lie with head on pillow
khanʌʌy	คแนย	pillow

BACK VOWELS - LONG

Column J: /uu/

puu	ปู่	father's younger brother
maluu	มลู	betelnut
macuu	มจู	sour
ruup	รูป	picture
duut	ดูด	suck
cuut	ลูต	wipe
tuuc	ตุจ	small
puuc	ปู่จ	seed grain
tuuk	ตุก	boat
pruun	ปรู้น	intestinal worm
?ancuun	อันจูน	carry
?anluuñ	อันลูญ	pattern of cloth
satuuŋ	ซัตจ	transplant rice
?anluuŋ	อันลูจ	hammer
muuh	มูฮ	mosquito
ruuh	รูฮ	to file
tuul	ตุล	carry on head

Column J: /uu/ (cont.)

muul	มูล	round
yuur	ยูร	long time
kuur	กูร	draw
?ayuy	อูย	ouch!

Column K: /uu/

cuu	อู	evil
kuu	คู	cow
cuup	อูบ	be soaked
luup	อูบ	greedy
?uut	อูต	show off, boast
lapuut	ลปูต	guava
ruuc	อูจ	be finished
luuc	อูจ	steal
chanuuk	ชอูก	look down from above
luuk	อูก	term of address; priest
luum	อูม	to comfort
nuum	อูม	urinate
buun	อูน	four
karmuun	กระมูน	bees wax
pruuk	ปรู	arrow
cuuk	อู	sell
yuuu	อู	pull up by a rope
tuuu	อู	a swing
duuh	อู	serve, ladle out
tuuh	อู	guilt
duui	อู	fall over
sruul	อู	lots of fun
cuur	อู	(plants) in a line
khuur	อู	brain
muuy	อู	one
cuuy	อู	help

Column L: /oo/

moo	โม	come
kanoop	กโนบ	grasshopper
mahoop	มโฮบ	food eaten with rice
caroot	ครอ	harvest rice
hoot	โฮ	draw something out of something
khooc	โค	to be spoiled

Column L: /oo/ (cont.)

krooc	ក្រូច	<i>citrus fruit</i>
koo?	ក្រែង	<i>call out loudly</i>
sanoo?	ឥណ្ឌូ	<i>food trough</i>
pa?oom	ប៉ៃម	<i>spoiled, mildewed</i>
cangkoom	ឥង្កែម	<i>canine teeth</i>
cadoon	គាត់	<i>common grandmother</i>
koon	ក្រែង	<i>child</i>
khoon	ក្រែង	<i>twisting, turning</i>
doon	ត្រែង	<i>coconut</i>
?ooh	ខ្លែង	<i>haul</i>
?ayoooh	ខ្លែង	<i>age</i>
cool	គ្រែង	<i>enter</i>
soor	ស្រែង	<i>sound</i>
padoor	ប៉ៃត្រ	<i>change</i>

Column M: /oo/

khoo	ក្រែង	<i>trousers</i>
phoo	ពេល	<i>when, after</i>
?oop	ខ្លែង	<i>hug</i>
ka?oop	ក្រែង	<i>tadpole</i>
boot	បូត	<i>religious meeting place</i>
doot	ត្រែង	<i>to pierce</i>
kanloo	ក្រែង	<i>scorched</i>
saroo	ស្រែង	<i>to water</i>
thook	ត្រែង	<i>cheap</i>
talook	ត្រែង	<i>shell of coconut</i>
karoom	ក្រែង	<i>under</i>
cangkoom	ឥង្កែម	<i>bunch</i>
soon	ស្រែង	<i>teach</i>
?oon	ខ្លែង	<i>bow</i>
koon	ក្រែង	<i>crooked, bent</i>
kantroun	ក្រែង	<i>struggle</i>
koo	ក្រែង	<i>dig out</i>
doon	ត្រែង	<i>rub</i>
cool	គ្រែង	<i>throw away</i>
?oo	ខ្លែង	<i>give</i>
karoo	ក្រែង	<i>behind, later</i>
sangor	ស្រែង	<i>to boil</i>
samoor	ស្រែង	<i>mucous</i>

Column N: /aa/

thamaa	ทมฺอ	stone
saa	ซฺอ	white
kaa	กฺอ	throat
chaap	ชฺอบ	like
taap	ตฺอบ	answer
thaat	ทฺอด	fry
?aŋkhlaac	อฺงคฺลฺอจ	abdomen shrunk because of hunger
?amplɛɛc ?amplaac	อฺาแปลจอฺาปฺลฺอจ	flimsy, no body
samaa?	ซฺมฺอก	bark
daa?	ดฺอก	pull out
krahaam	กระหฺออม	red
plaam	ปฺลฺออม	counterfeit
baan	บฺอน	place
chaan	ชฺอน	spoon
baaŋ	บฺอง	older
kaaŋ	กฺอง	pile, group
?aar	อฺอร	happy
tasaaŋ	ตฺซฺอร	post
kaay	กฺอย	delicacies eaten when drinking
laŋaay laŋaay	ละงฺอยงฺ	slight movement

GLIDES

Column O: /la/

raŋla	รฺเจีย	cold
cia	เจีย	good
wia	เวีย	they
riap	เรียบ	smooth
tiap	เตียบ	low
katiat	กเตียต	bounce off
ñlat	ญฺเียต	relatives
rlac [ɛy]	เรียจ	reign
laŋlac [ɛy]	ลฺเจียจ	evening
nla?	นฺเียก	naga
pla?	ปฺเียก	word
chlam	เชียม	blood
yiam	เยียม	guard
mlan	เมียน	have
llan	ลฺเียน	yard, threshing floor
tlañ [ɛy]	เตียญ	pull

Column O: /ia/ (cont.)

pamphliañ [ɛy]	บม พลียญ	<i>destroy</i>
liang	เลียง	<i>wash</i>
nlaŋ	เฌียง	<i>girl</i>
wiah	เวียฮ	<i>cut open</i>
ramlah	รเมียฮ	<i>rhinoceros</i>
prial	เปรียล	<i>jute</i>
tial	เตียล	<i>dull</i>
llaw	เลียว	<i>Lao</i>
m̥tan ranjiaw	เมือนรเจียว	<i>rooster crows</i>

Column P: /ya/

thalya?	เทลียะ	<i>fall</i>
tya?	เตียะ	<i>to trap</i>
kyan	เกียง	<i>cramped</i>
cyan	เคียง	<i>more than</i>
katyah	กเตียฮ	<i>frying pan</i>

Column Q: /ua/

pua	ปัว	<i>hold in arms</i>
yua	ยัว	<i>take</i>
rua	รัว	<i>look for</i>
kruap	กรวบ	<i>cover</i>
kantuap	กันตวบ	<i>rags</i>
luat	ลวด	<i>a type of dessert</i>
papua?	ปะปวก	<i>cloud</i>
panlua?	ปันลวก	<i>sprout</i>
lamuam	ลมวม	<i>enough</i>
katuam	กะตวม	<i>shack in field</i>
muan	มวน	<i>mulberry</i>
puan	ปวง	<i>egg</i>
ruan	รวง	<i>garden bed</i>
chuar	ชัวร์	<i>stand</i>
quar	งัวร์	<i>bend</i>

Column R: /wa/

lalwat	ลลิวัด	<i>extinguish</i>
sampwat	ซำปัวต	<i>skirt</i>
lwa?	ลัวะ	<i>sleep</i>
lamwa?	ลมัวะ	<i>dust</i>
prapwan	ประป้วน	<i>wife</i>
thanwan	ทจ้วน	<i>weight</i>

Column R: /wa/ (cont.)

prwaŋ	ปฐวาง	hole
laŋwaŋ	ลจวาง	stupid
pwah	ปวอ	snake
chamwah	ชมวอ	name
twal	ตวล	lay head on pillow
kwal	กวล	stump of tree

FRONT VOWELS - SHORT

Column S: /i/

kip	กิบ	hair curler
cit	ชิด	near
ŋit	จิด	dark
lɪc	ลิจ	sink
tic	ติจ	sting
katɪm	กติม	onion
santɪm	ซันติม	parallel, along side
mawɪŋ	มวญ	come back
tiŋ	ติญ	buy
cih	ชือ	ride
nih	นือ	this
kacil	กจิล	lazy
wil	วิล	go around

Column T: /ɛ/

wɛc	วุจ	wrap up
phɛc	ฟลูจ	forget
thamɛŋ	ทญญ	tooth

Column U: /e/

hep	เฮ็บ	container for betel ingredients
kalep	กเล็บ	all in order
laʔet	ลเอ็ด	fine
sawet	ซเว็ด	dried out
kadec	กเด็จ	pinch
chalec	ชเล็จ	squeeze (as a lemon)
mem	เม็ม	drink from breast
ʔancem	ฮันเซ็ม	raise, rear
saren	ซเร็น	Surin
sen	เซ้น	centimeter

Column U: /e/ (cont.)

deñ	เดญ	know
taneñ	ตญ	ask
weh	เวอ	move aside
rateh	รเตอ	oxcart
ra?el	รเออ	slippery
?amel	อเมอ	salt
krew	กเรอ	commotion
hew	เฮอ	hungry
prey	ปเรอ	forest
rampey	ร่าเปอ	lullaby

Column V: /ε/

tεc	ต๊จ	small
?λλεc	สู่ล๊จ	toward the west
pε?	เป๊จ	transplant
papre?	ปะแปร๊ะ	surface partly wet with water
maplem	มะแปลัม	come for a moment
cuunceñ	จูนญ	send someone
cεh	แฉ้อ	know
pheh	แพ้อ	ashes
bey	เบ๊ย	three
wey	เว๊ย	strike, spank

Column W: /a/

hap	ฮับ	almost
chap	ชับ	hurry
sat	ซัด	animal
saṇat	ซังด	quiet
kanac	กนัจ	a species of termite
carbac	คัรบัจ	squeeze
ca?	คะ	pierce
da?	ดะ	place
chanam	ชน่า	year
pram	ปร่า	five
kan	ก้าน	hold in hand
man	มัน	not
khlañ	คลัญ	grease
bañ	บัญ	shoot
khlah	คลฮ	plural
cah	ฉ้อ	old

Column W: /a/ (cont.)

dal	ดัล	<i>box, punch</i>
tabal	ตบัล	<i>(rice) mortar</i>
caʔar	จฮัร	<i>sharp</i>
haw	เฮา	<i>call</i>
kadaw	กเตา	<i>hot</i>
thanay	ไทง	<i>sun</i>
day	ไต	<i>hand</i>

CENTRAL VOWELS - SHORT

Column X: /+/

trak+p	ตระก๊ป	<i>snap closed</i>
kantr+p	กันตริบ	<i>indented</i>
ʔaat+t	อาติด	<i>Sunday</i>
k+t	กิด	<i>think</i>
t+k	ติก	<i>water</i>
pr+k	ปริก	<i>morning</i>
sangk+ɱ	ฮังคิม	<i>hope</i>
pal+ɱ	ปลิม	<i>dusk</i>
raw+ɱ	รวิน	<i>confused</i>
l+ɱ	ลีน	<i>to hem</i>
r+ŋ	ริง	<i>hard</i>
sat+ŋ	ฮตึง	<i>stream</i>
man+ɱ	มน็ย	<i>people</i>

Column Y: /ɣ/

pakɣp	ปก๊ป	<i>shove over against</i>
sanɣp	ฮณ๊บ	<i>impression, imprint</i>
dac pɣt	ดัจเป็ด	<i>completely sever, snap</i>
r+ŋ pɣŋ	ริงเป็ง	<i>very hard</i>
traŋ cakɣr	ตรองจเก็ร	<i>very straight</i>
tamaʔ tamɣr	ตมะอะตเม็ร	<i>slam around in anger</i>
nɣw	เน็ว	<i>be at</i>
tɣw	เต็ว	<i>go</i>
sadɣɣ	เซต๊ย	<i>what?</i>

Column Z: /ʌ/

haa sap	ฮาแฮบ	<i>fifty</i>
kabʌt	กแฮต	<i>shut</i>
ʔanʌt	ฮแฮต	<i>be sorry for</i>
dʌʔ	แดอะ	<i>lead with rope</i>

Column Z: /ʌ/ (cont.)

phʌʔ	แพอะ	<i>drink</i>
pʌn	แป็น	<i>same size</i>
khʌn	คั้น	<i>belongings</i>
patʌl	ปแตล	<i>dipper</i>
masʌl	มแะล	<i>yesterday</i>
hʌr	แฮร์	<i>peppery hot</i>
kanʌr	กแะร	<i>rat</i>
khʌŋ	คั้ง	<i>be angry</i>
caʔʌŋ	จแะง	<i>bone</i>
kʌh	แกฮ	<i>pry up</i>
cʌh	แะฮ	<i>pound out rice</i>
phlʌw	แพลัว	<i>road</i>
ʔʌw	แะว	<i>father</i>
nuhhʌy	นุฮแะย	<i>that's it</i>

BACK VOWELS - SHORT

Column AA: /u/

karʔoop trup	กัรโอบตຽប	<i>sweet smelling</i>
trut	ตຽត	<i>indentation</i>
lamut	ลุมุด	<i>sapadilla</i>
muc	มูจ	<i>submerge yourself</i>
carmuc	จัรมูจ	<i>submerge someone else</i>
yuatuk	ยัวตุก	<i>take away</i>
muk	มูก	<i>face</i>
tum	ตุ้ม	<i>ripe</i>
cum	คumm	<i>together</i>
mun	มุน	<i>before, first</i>
krun	กรุน	<i>fever</i>
ruñ	รูน	<i>push</i>
yung	ยุง	<i>granary</i>
malung	มลูง	<i>hole</i>
nuh	นุฮ	<i>that</i>
puh	ปูฮ	<i>to slice</i>
ʔancul	ฮันคูล	<i>needle</i>
tul	ตุล	<i>to force up from underneath</i>
patur	ปตุร	<i>roof of vehicle</i>
pur	ปูร	<i>deep soft surface of ground</i>
kantwii/kantuy	กันตุย	<i>tail</i>
ʔaŋkwii/ʔaŋkuy	ฮังกวย	<i>sit</i>

Column BB: /u/

krup	กรูบ	<i>complete, all</i>
?ancup	อันลูป	<i>suck</i>
yum	ยุ่ม	<i>cry</i>
phanum	พุ่ม	<i>mountain</i>

Column CC: /o/

panchop	ปันชบ	<i>make stop</i>
dop	ดบ	<i>forest country</i>
lot	ลด	<i>subtract from</i>
trot	ตรต	<i>singing troupe</i>
soc	ชจ	<i>a kind of mosquito</i>
cakoc	จกจ	<i>flick toward oneself</i>
bo?	บะ	<i>to pound in mortar</i>
to?	โต๊ะ	<i>table</i>
kom	กม	<i>don't</i>
khñom	คญม	<i>I (woman speaking)</i>
toh	ตอ!	<i>go!</i>
moh	มอ!	<i>come!</i>
karmol	กำรมล	<i>round</i>
kadol	กดล	<i>lump</i>
sa?oy	ชะอย	<i>smell bad</i>
?oy	อย	<i>what, why?</i>
kamor	กมร	<i>a kind of bug</i>
hʌrpor	แฮรปร	<i>sound of a bird taking off</i>

Column DD: /ɔ/

hot	ฮอด	<i>sip food</i>
dɔt	ดอด	<i>burn up</i>
hɔc	ฮอดจ	<i>hand over</i>
?ɔc	ฮอดจ	<i>light a fire</i>
so?	เฮาะ	<i>happiness</i>
srɔ?	เฮาะระ	<i>village</i>
bɔn	บือน	<i>merit</i>
cɔŋ	จ้อง	<i>the end</i>
kanɔŋ	กนึ่ง	<i>inside</i>
?linɔh	ชนึ่ง	<i>there</i>
cɔh	จ้อง	<i>descend, pierce</i>
hʏmsapɔl	แฮมชบ็อล	<i>swell up, putrify</i>
bɔl	บ็อล	<i>interest paid in rice</i>

Column EE: /a/

dap	ด็อบ	ten
kap	ก็อบ	bury
bat	บ็อด	fold
sabat	ซบ็อด	oath
sa?	เฮาะ	hair of head
la?a?	ลเฮาะ	cloudy liquid
cam	ค็อม	on target
?antram	อันตร็อม	stamp down on
?an	อ็อน	weakened condition
palan	ปะล็อน	armed robbery
càŋ	ค็อง	want
tràŋ	ตร็อง	straight
?ah	อ็อฮ	all gone
dah	ด็อฮ	remove
dal	ด็อล	arrive at
khayal	คย็อล	wind
war war	ว็อรว	soft and wet
tuan ?ampar	ตวนอว็อร	limp (adj.)

SUMMARY OF CONTRASTS

Column FF

sll	ชี	eat
kll	กี	he
tee	เต	no
srɛɛ	ซแร	ricefield
khlaa	คลา	tiger
l++	ลือ	hear
məə	มื่อ	look at
thyy	เทอ	do
bʌʌ	แบอ	if
puu	ปู่	father's younger brother
cuu	คู	evil
moo	โม	come
khoo	คอ	trousers
soa	ซื่อ	white
cia	เซีย	good
pua	ปัว	hold in arms

Column GG

lic	ลิจ	sink
-----	-----	------

Column GG (cont.)

wlc	วืจ	wrap up
kadec	เกตืจ	pinch
tec	แตืจ	small
carbac	จระบัจ	squeeze
tiñ	ติญ	buy
wleñ	วืญ	pinch
deñ	เต็ญ	know
cuuncεñ	จุนแฉญ	send someone
bañ	บญ	shoot
phlæw	พลัว	lap
nyw	เนืว	be at
phlaw	แพลัว	road
tum	ตุ้ม	ripe
yum	ยุ่ม	cry
kom	กม	don't
kanɔŋ	กน็อง	inside
traŋ	ตริ๊อง	straight
prwaŋ	ปรั๊ว	hole

Sample connected text

In the course of the work done at Surin I asked the principal native speaker, Leuam Thongkham to tell me how he plants tobacco. His account was recorded on tape. It was then played back to him, and he redictated it to me, editing it as he did so. Both of us transcribed it in the Thai script. The first two lines of the text give Northern Khmer in romanised and Thai scripts, followed by literal and free translations into English as I understand the account.

The text is written with wide spaces between words simply to make it easier to identify the words by their equivalents. It is not suggested that normal Northern Khmer text be written in this way.

ʔandap	taa	tyw	nih	khmaat	n+ŋ	baan	ʔanyey
อันตบ	ตอ	เตี๊ว	นือ	คมาต	นึ่ง	บ้าน	อันแอ้ย
next	follow	go	this	I	will	be able	speak

Now I am going to tell how we

reəŋ	kaar	dam	thanam,	นง	canwat	saren	yəəŋ.
ริ่ง	การ	ด่า	ทนาม,	น็อง	จ้งวัด	ซเร็น	ยั้ง

story work plant tobacco in province Surin our
plant tobacco in Surin Province.

kaar dam thanam nih rɣɣm tantɛɛ raaw dʔan
 ការ ដាំ ពង្សា និច្ច, រើម ច្រើន រវា ដើម
work plant tobacco this begins from time of about month
Planting tobacco begins about

tuʔlaa. yœŋ kʌʔ rɣɣm thɣɣ dey prwah koon.
 តុលា. ឃ្លា ក៏ រើម ពេ ដើម ប្រើ កែវ
October we begin do ground scatter seedlings
(prepare)
October. We begin by preparing the ground and scattering seedlings.

thanam. phoo tɛɛ prwah koon hʌʌy, yœŋ kʌʔ
 ពង្សា. វា ដើម ប្រើ កែវ ឆ្ងាយ, ឃ្លា ក៏
tobacco having finished scatter seedlings already we
Then we

taŋ raʔɛɛŋ srooc t+k sap ɲay sap ɲay,
 តាង រដ្ឋ ឆ្នេរ ត្រី សាប រៀប សាប រៀប,
must set about to water water every day every day,
must immediately set about watering them every day

con taa thanam nuh wia thom lʌʌŋ, baan kaʔ
 គង តា ពង្សា ម្ត រើម ពង ឆ្ងាយ, បាង ក៏
until tobacco those they big rise be able
until the plants are able to grow tall

nay raaw kanlah khɛɛ. daaʔ yua koon thanam
 នៃ រវា កង គី ដើម យ៉ា កែវ ពង្សា
in about half month pull out take seedling tobacco
in about half a month. We then pull up

nuh hʌy moo pɛʔ taa tyw tɛɛ. kʌʔ thaa
 ម្ត ឆ្ងាយ ម្ត ដើម តា ត្រី ដើម ក៏ តា
those come transplant continue go more that is
those tobacco seedlings and transplant them.

yua koon thanam moo pɛʔ. kaar pɛʔ koon
 យ៉ា កែវ ពង្សា ម្ត ដើម. ការ ដើម កែវ
take seedlings tobacco come transplant work transplant seedlings
In order to do

thanam, yœŋ kʌʔ taŋ thɣɣ ruŋ yaŋ laʔaa
 ពង្សា, ឃ្លា ក៏ តាង ពេ រវា យ៉ា ឆ្ងាយ,
tobacco we must make bed kind well
this we must make the bed well

prwah kaar pe? nih, yəəŋ thɿɿ ruan man la?aa
 ปรวา การ แปล นี, ยิง เทอ รวง มั่น ลอ,
because work transplant this we do bed not good
because if we do not

wia ka? man kaat phal praywa ɿwa yəəŋ.
 เวีย ก็ มั่น แก็ด ฟือล ประยอ ออย ยิง.
it not produce fruit useful for us
we will not get good results.

məə taa yəəŋ daa? koon thanam yua moo
 มีอ ตา ยิง ตอ โคน ทน'า ยัว โม
see that we pull up seedling tobacco bring come
After we transplant the seedlings

pe? haay, yəəŋ ka? taan ra?əəti srwa t+k
 แปล แฮย, ยิง ก็ ตอ รแอญ ชรอด ตัก
transplant already we must set about to water water
we must set about watering

sap nay sap nay. piir bey nay yəəŋ ka?
 ซ๊อบ ไง ซ๊อบ ไง. ปีร์ แบย ไง ยิง ก็
every day two three day we
them every day. Every two or three days we

ca? t+k nuum manaaŋ tyw cəh. phwa koon
 จะ ตัก นูม มนอ เตียว แชฮ. พอ โคน
pour water urine one time go know when seedlings
water them with urine once.

thanam yəəŋ nyw nay raaw kanlah khəə, wia
 ทน'า ยิง เนียว ไน ราว กันลฮ แค, เวีย
tobacco our be at in about half month they
In about half a month, when the seedlings

ka? kapwah baan nay raaw dap sen.
 ก็ กปัวฮ บาน ไน ราว ด๊อบ เซ็น.
high be able in about ten centimetres
have reached about ten centimetres high,

phwa tee koon thanam kapwah, yəəŋ rɿym
 พอ แต โคน ทน'า กปัวฮ, ยิง เริม
when seedling tobacco high we begin
at this time we begin

peʔ koon thanam yeeng kʌʔ thɣɣ dey tuk.
 แปละ โจน ทน'า ยิง ก็ เทอ แด็ย ตุก.
transplant seedling tobacco our do ground ahead of
our transplanting. The ground has been time

pacuur thanaal tuk yaang laʔaa,
 ปจู้ร ทนาล ตุก ยาง ลจ้อ
plow ground within dikes ahead of time way good
plowed ahead of time, so that

koon thanam yeeng thom phɔɔ cia, dey kʌʔ
 โจน ทน'า ยิง ทม พอ เจ็ย, แด็ย ก็
seedling tobacco our big enough good ground
when the tobacco plants are big enough and the ground has been

laʔet phɔɔ cia, phɔɔ dam baan. pʌʌ dey
 เลอ็ด พอ เจ็ย, พอ ต'า บาน. แปอ แด็ย
broken up enough good when plant able if ground
broken up enough, we are able to plant.

laʔet hʌʌy, koon thanam thom hʌʌy.
 เลอ็ด แอ็ย, โจน ทน'า ทม แอ็ย,
broken up already seedling tobacco big already

yeeng kʌʔ ciic malung kʌʌt ciɛ ruan ruan
 ยิง ก็ ชิค มลุง แก็ด ชู่ รวาง รวาง
we dig hole be able to be bed bed
Then we can dig holes in the beds,

baan kʌʔ reec ciir tyw daʔ taam
 บาน ก็ เรจ ชีร เต็ว ดะ ตาม
able to carry on ends of pole manure go put on along
bring in manure, and put it in

malung, nay raaw maa malung maa talaak
 มลุง, ไน ราว มา มลุง มา ตลอก
holes in about one hole one half shell of coconut
the holes at about the rate of one half coconut shell per hole.

thom. phɔɔ tee daʔ ciir baan hʌʌy, thanay
 ทม. พอ แด ดะ ชีร บาน แอ็ย, ไทง
big when put on manure be able already day
When that is done some evening

lanjac yəəŋ kʌ? rɿɿm daa? koon thanam
 ลเจียจ ยิง กี่ เริม ดอก โคน ทน'า
evening we begin pull out seedling tobacco
we begin transplanting.

tyw cat kaar dam baan, kaar dam thanam
 เตี๊ว คัด การ ต'า บาน. การ ต'า ทน'า
go begin work plant be able work plant tobacco

nih, wia kʌ? taaŋ lambaa? krɿan hʌy. tyw
 นิฮ, เวีย กี่ ตอง ล'าบาก เกร็อน แฮีย. เตี๊ว
this it must difficult quite go
Planting tobacco is quite difficult.

dam cəwɿ lɿyy man baan, taaŋ tyw srəwɿ
 ต'า จอว เลย มั่น บาน, ตอง เตี๊ว ช'รจ
plant throw out at all not able must go to water
You can't just plant it, but must go and water

tɿk, duu lɛɛ məə tanɿaw, caruuy ca? tɿk
 ตึก ดู แล เมอ ตังแก๊ว, จ'รึย จะ ตึก
water look after look at grubs break up pour water
continually, searching for pests, pinching off leaves,

nuum nay raaw maa ʔaatɿt piir dɔwŋ dɔwŋ. triam taa
 นูม, ไน ราว มา อาตัต ปีร ดอง ๆ. เตรียม ตา
urine in about one week two times until
and watering with urine a couple of times a week until

thanam yəəŋ thom krɿan, ka? salɿ? mian baan
 ทน'า ยิง ทม เกร็อน, กะ ช'ลละ เมียน บาน
tobacco our large quite leaves have able
the plants are quite large. When the plants have

piir tanap sanɿɿ? yəəŋ kʌ? kadec truuy
 ปีร ต'น็อบ ชั่นแลอะ ยิง กี่ เกตัจ ต'รึย
twelve leaves we pinch off tender tops
twelve leaves we pinch off the tender new leaves

thanam nuh cɛŋ. prwah man ʔəwɿ thanam kapwah
 ทน'า นุฮ แฌญ. ปริวฮ มั่น ออย ทน'า ก'ปิวฮ
tobacco that off because not let tobacco tall
so that the plants will not grow taller.

taa tyw tuit. baa kadec truyy haa,
 តូច ធ្វើ តូច. បាប កេតិក គ្រូប អើប,
any more if pinch off tender leaf already
As we do this

yəəŋ kʌ? taaŋ raʔəəŋ sarəcc tɨk sap ɲay ɲay.
 យ៉ាង ក៏ តូច រន្ទេញ ឥន្ទ តិក ស៊ប ងាយ ងាយ.
we must continuously to water water every day
we have to keep on watering continuously every day

con taa salaʔ ləə kɨe mat, deɛl tuuc cian
 គង តា ស្រា លោ ក្រៃ ម៉ាត, ដេល តូច ឆ្មើង
until leaf on top they all gone that small more than
until the leaves on top are all gone.

kɨe, thom cian kɨe mat. sanəh kʌ? thanam wia
 ក្រៃ, តូម ឆ្មើង ក្រៃ ម៉ាត. សនេ ក៏ តាណា វ្យា
they bigger than they all gone now tobacco it
Now the tobacco is

kʌ? kuyy cah ləəŋ. baa thanam cah haa kʌ?
 ក៏ ក្យី ឆ័ លោង. បាប តាណា ឆ័ អើប ក៏
gradually get older more if tobacco get older already
gradually getting older.

sanəh baa san taa wia luut khanəŋ boon
 សនេ បាប សាន តា វ្យា លូត កាណេញ បុន
now if it should it send out branches place
At this point if it should send out new branches

paseeŋ tyw tuit. yəəŋ kʌ? kac cəol tyw
 បាសេញ ធ្វើ តូច. យ៉ាង ក៏ កាច ចុល ធ្វើ
different go more we rake off throw away go
we prune them off.

rəəy rəəy. con taa thanam yəəŋ ka? thaə wia
 រ៉ាយ រ៉ាយ. គង តា តាណា យ៉ាង កា តា វ្យា
frequently until tobacco our say it
When the tobacco

cah meen teen, yəəŋ kʌ? chop srəcc. sanəh
 ឆ័ មេន តេន, យ៉ាង ក៏ ចប់ ឥន្ទ. សនេ
get older really we stop water now
gets older we stop watering it.

cat kaar rua kataat rua ʔoy.
 คัด การ ราว กตาด ราว อย.
arrange work look for framework look for every thing
We now prepare frames and collect everything for the next stage.

beh yua thanam tyw pantum, taam baan deɛl
 แบือ ยัว ท่นำ เตี๋ย บันตุม, ตาม บูน แดล
pick take tobacco go to age in place that
We pick the tobacco and take it to age it

thyy baan pantum thanam. bla thanam yæŋ tum
 เทอ บูน บันตุม ท่นำ. แบอ ท่นำ ยั้ง ตุม
do place age tobacco if tobacco our ripe
in a special place. When it is

hlay kaʔ rua kamet rua ʔoy moo han
 แลย ก็ ราว กเม็ต ราว อย โม ฮัน
already look for knife look for everything come slice
properly aged we get a knife and slice the tobacco.

thanam baan. phoon prɔh kaʔ han tyw, phoon
 ท่นำ บาน. โพง ปรีฮ ก็ ฮัน เตี๋ย, โพง
tobacco be able group men slice go group
Men slice the tobacco in a group while

srey kaʔ nɬam khanla haal tyw,
 แสรย ก็ เห็อม เคหนย ฮาล เตี๋ย,
women lead each other spread out to dry go
women spread it out to dry,

cɬan taa thanam nuh sanvut kaʔ raaw piir gay
 เฉ็อน ตา ท่นำ นุฮ ซ่งวุด กะ ราว ปี้ร งาย
until tobacco that dry roughly about two days
which takes roughly two or three days.

bey gay. yæŋ kaʔ bat thanam kɬɬ thaa bat
 แบย งาย. ยั้ง ก็ บ๊อต ท่นำ ทื่อ ทา บ๊อต
three days we fold tobacco that is fold
We fold the tobacco leaf into

ʔɔɔy klat koon. bat baan hlay yæŋ kaʔ
 ออย แก็ต โกน. บ๊อต บาน แลย ยั้ง ก็
to cause to become wad fold be able already we
a wad and then spread it out exposed to

haal		t+k	ʔansʌʌm	nay	raaw	piir
ฮาล		ตัก	อันแฉม	ไน	ราว	ปี้ร
<i>spread out to dry</i>		<i>water</i>	<i>dew</i>	<i>for</i>	<i>about</i>	<i>three</i>
<i>the dew</i>						

yup.	kaʔ	yua	thanam	daʔ	laŋ	baan.	kaar
ยูป.	กี	ยัว	ทณำ	ดะ	ลัง	บ้าน.	การ
<i>nights</i>		<i>take</i>	<i>tobacco</i>	<i>place in</i>	<i>box</i>	<i>able</i>	<i>work</i>
<i>for about three nights. After that the tobacco is put away in a box</i>							

dam	thanam	kaʔ	cap	panneh	hay.
ดํ	ทณำ	กี	ค็อบ	ปันแนช	แฮย.
<i>planting</i>	<i>tobacco</i>		<i>finished</i>	<i>just</i>	<i>this much</i>
<i>and the work is finished.</i>					

CHAPTER FOUR

THE PROBLEMS OF CONSONANTS AND TONE: HMONG (MEO, MIAO)

WILLIAM A. SMALLEY

The two principle Hmong (Meo, Miao) groups in Thailand are the Hmong Daw - /hmǝ¹ ʔdaü¹/ <hmoob dawb ອມັ່ງ ເຕີວ> (White Meo, ແມ້ວຂາວ) - and Hmong Njua - /mǝ¹ ntʂua¹/ ¹<moob ntsuab ອມັ່ງ ນິຊື້ວ> (Green Meo/Blue Meo, ແມ້ວຂາຍ/ແມ້ວລາຍ). Young (1966) estimates a population of 26,400 Hmong Njua and 19,200 Hmong Daw in Thailand.²

The Hmong (Meo) in Thailand are the southwestern extension of peoples speaking a variety of dialects and languages, numbering probably close to three million, two-thirds of whom are in China, where they are generally known as Miao. Hmong Daw (White Meo) and Hmong Njua (Green/Blue Meo) in Thailand are dialects almost identical with the predominant Hmong dialects of Laos, where there are larger populations than in Thailand itself. The Hmong in Thailand came from Laos.

Hmong Daw (White Meo) dictionaries by Bertrais (1964) and Heimbach (1966, 1969) list several names for Hmong groups. Because of the confusion in the names of Hmong groups all over Southeast Asia this information is summarised here.³ When not coded with B(ertrais) or H(eimbach)

¹Hmong Njua does not have initial /hm/, but has corresponding /m/ instead, as will be described below. Hmong nevertheless makes a satisfactory generic designation for both groups, as the sound correspondence is automatic. See the discussion of a unified writing system for both dialects under the discussion of the Thai orthography.

²See also LeBar, *et al.* 1964:77-81.

³Another listing is to be found in Lyman 1970:130.

the information is common to both dictionaries. Whitelock¹ has made subsequent investigation, and where pertinent, her comments are added and coded with W(itelock).

<hmoob dawb อม้ง เตีว> /hmõ¹ ?daü¹/ ² 'White Meo'

<hmoob ntsuab อม้ง นั๊ว> /hmõ¹ ntšua¹/ B: 'Green Meo' ("often given to Hmong Lees, and preferred by them"); H: 'Green or Blue Meo'

<hmoob lees อม้ง เหล้ง> /hmõ¹ lã⁵/ 'Striped Meo' ("They prefer the name 'hmoob ntsuab'" [B]; "Another name for Green or Blue Meo" [H]);³ "A sub-grouping of Hmong Njua, rather than an equivalent term" [W])

<hmoob quas npab อม้ง ก้าว มบ๊ว> /hmõ¹ qua⁵ npa¹/ 'Armband Meo' ("A sub-grouping of Hmong Daw" [W])

<hmoob vaj อม้ง ว่า> /hmõ¹ va²/ (B)

<hmoob tom nras อม้ง ตอค์ หนร่า> /hmõ¹ to⁷ nra⁵/ (B)

<hmoob dub อม้ง ด้> /hmõ¹ ?du¹/ 'Black Meo' (B)

<hmoob sib อม้ง ซั> /hmõ¹ šj¹/ (B) ("A subgrouping of Hmong Njua" [W])

<hmoob yob tshuab อม้ง ย้อ ทซัว> /hmõ¹ yo¹ tšhua¹/ ("Flowery Meo [or Miao] as known from China" [H])

<hmoob pws อม้ง ป> /hmõ¹ pü⁵/ ("A subgrouping of Hmong Njua" [W])

Hmong in Thailand are scattered in small pockets of settlements in the mountains of Nan, Phrae, Chiang Rai, Chiang Mai, Pitsanulok, Phetchabun, Loei, and Tak provinces.⁴ In Laos their major concentrations are in Xieng Khouang and Luang Prabang provinces and northward (LeBar *et al.* 1964: map).

The regular sound correspondences between Hmong Daw and Hmong Njua are uncomplicated (Purnell 1970). Intercommunication between these dialects is common, and there is no doubt of their mutual intelligibility. For these reasons I handle them as a single language and describe

¹I am deeply indebted to Doris M. Whitelock for her invaluable help in the preparation of this chapter. She has been primarily responsible for the preparation and revision of the Thai orthography for Hmong (as well as for a Lao orthography used in Laos), has helped as a research assistant in checking problem points, doubled as proofreader and critic for several drafts, provided the sample text, and conducted the practical testing of the parallel orthography in Laos.

²The first of the three transcriptions of each example is one in the dictionaries. I have supplied the others. The relation between the transcriptions is described later.

³Moody reports that the term /mõ¹lã⁵/ (Hmong Njua pronunciation) is used very little by Hmong Njua of themselves in Tak Province, Thailand. These Hmong Njua are of the subgroup Hmong Sib, according to Whitelock's information.

⁴Young 1962:37. The dialects which Purnell 1970 refers to as "Petchabun" and "Tak" are Hmong Daw and Hmong Njua respectively. [Historical and demographic statements in this paper are now (1976) drastically changed by political/military developments in Laos and the influx of thousands of Hmong refugees into Thailand.]

them together in this paper. I would propose to write them identically, but it is not at all clear that this proposal will ever be acceptable to all Hmong Njua, as will be discussed below.

Phonological analysis and orthography preparation

The phonological analysis in this paper is based primarily on the work of Barney and Smalley in Xieng Khouang, Laos (Barney and Smalley 1952,1953). Barney undertook the analysis of Hmong Leng¹ <hmoob lees> (Striped Meo), which according to Whitelock is a subgrouping within Hmong Njua (Green/Blue Meo), and made some comparison with Hmong Daw (White Meo) as well. Smalley was in Laos at the time working on the analysis of another language (Smalley 1961) and had the opportunity to check Barney's work and help in its organisation and in the interpretation of the data. Smalley wrote the reports based upon their joint efforts.

In the meantime, Father Yves Bertrais-Charrier was learning Hmong Daw (White Meo) in the Luang Prabang area, and was beginning to make tentative experiments with an orthography for it. In 1953 Smalley was able to clarify some technical points of phonology for Bertrais. He drew up a suggested orthography in consultation with both Barney and Bertrais which was adopted by both. This orthography is the Roman letter one transcribed within < > in this paper.

Bertrais has continued translating and writing in this orthography in the years since, and several hundred Hmong users are to be found in Laos. Bertrais' (1964) dictionary is a major work using this system. A discussion of this and other writing systems for Hmong in China and Laos is to be found in Lemoine 1972.

Missionaries coming into Thailand to work among the Hmong groups at about the time the orthography was worked out in Laos adopted it for Hmong Daw (White Meo) and Hmong Njua (Green/Blue Meo) in Thailand. They used the Barney-Smalley reports on Meo to give them an introductory orientation to the language. The orthography from Laos turned out to be fully applicable to Hmong Daw in Thailand, and was reported to be so for Hmong Njua as well. However, more recently Moody reports that a set of contrasts which is found in the dialect on which the orthography is based is very weak or does not occur among his informants in Thailand. The details of this problem will be pointed out later in the appropriate place.

¹At least, that is what we understood at the time. The dialect may have been Hmong Sib, or there may have been informants from both these dialects.

The number of Hmong literates in Thailand who can use this Roman orthography is small, under one hundred in all. Unlike Laos, there has been little interest on the part of Hmong to learn it. The amount of literature prepared is likewise small, with various portions of the Bible, hymn books, etc. Heimbach's (1966,1969) dictionary in this orthography is, however, a work of major importance.¹

From time to time there have been missionaries working among the Hmong who have felt that the Hmong language in Thailand should have a Thai-based script. In 1958 an experiment was undertaken to see what would be involved in the preparation of such a script. One primer was prepared. The experiment and the primer, however, were not satisfactory, as the problems of transcription had not been sufficiently thought out. In 1965 the matter came up again and there was a reconsideration of the whole question of a Thai-based script for the Meo. The resulting proposals, modified after testing and after parallel experience in Laos,² are incorporated in the Thai-letter transcriptions of Hmong in this chapter.

In the one village in Thailand where the Thai orthography for Hmong was seriously introduced, it received a much more enthusiastic reception from the Hmong than did the Roman script. Several experimental primers were prepared by Whitelock and her Hmong Daw assistants and used there. Some of the Hmong literature previously transcribed in Roman script was retranscribed in the Thai script.

However, there is no widespread interest in learning to read among Hmong in Thailand which has ever been tapped by either Romanised or Thai-based orthography. Doris Whitelock transferred to Laos, where the

¹Lyman 1970 and 1974 are Hmong Njua dictionaries with somewhat different transcriptions. Neither were a result of language planning but designed for the use of non-Hmong laymen in the first case, and linguists in the second. They are not discussed here. The orthography of Lyman 1974 was used in Lyman's earlier works (1962, 1968, 1969). A listing of the correspondences between Lyman's symbols (except his 1970 work) and those of the romanised system reported in this chapter is given in Hermsdorf 1969. A comparison of his 1970 symbols with those used in his other works mentioned may be found in Lyman 1970:128.

²The development of the Lao-based and Thai-based orthographies for Hmong have been kept completely parallel. Experience gained in the one was applied to the other. The Lao system is not quite as rich as the Thai in symbols which could be used for Hmong sounds which do not occur in Thai or Lao, necessitating some minor differences between the two.

The Lao-based orthography, however, is much more widely used than the corresponding Thai-based orthography. There are many more Hmong Christians in Laos, and a much stronger motivation for learning to read. The Lao government has endorsed Hmong primers in Lao script for use in schools, and the New Testament is being translated, along with other reading materials.

A second Lao-based orthography for Hmong is in use by the Hmong branch of the Pathet Lao.

interest does exist. Efforts continue in Thailand, but so far have not aroused more than very local interest.

In writing this chapter I am handicapped by the fact that I have not had first-hand intensive contact with Hmong in recent years. In addition to the original analysis, however, I have benefited from the Bertrais and Heimbach dictionaries,¹ and from the unpublished observations of the following missionaries who have learned one or the other of the Hmong dialects in question: Donald E. Rulison, Ernest E. Heimbach, Doris M. Whitelock,² Walter R. Moody, Garland M. Bare, and Gillian Orpin. I am confident that the phonological analysis is adequate for orthographic purposes because people who have used it have been satisfied with the fit between orthography and sound system, except for the problem raised by Moody as mentioned earlier, and one or two unresolved problems of intonation and juncture which will be described.

Consonants

Labial - central release	Labial - lateral release	Dental - central release	Dental - lateral release	Dental - affricated release	Retro- flexed	Palatal	Palatal - affricated release	Velar	Back velar	Glottal
p	pl	t	tl (?d)	ts	r	c	tš	k	q	ʔ
ph	plh	th	tlh (?th)	tsh	rh	ch	tšh	kh	qh	
np	npl	nt	((ntl))	nts	nr	nc	ntš	nk	nq	
nph	nplh	nth		ntsh	nrh	nch	ntšh	nkʰ	nqʰ	
m	ml	n	l			ɲ		[(ŋ)]		
(hm)	(hml)	(hn)	hl			(hɲ)				
f		s			ʃ	x				h
v					ʒ	y				

Table 1. Consonants

Items in single parentheses occur in Hmong Daw only. Those in double parentheses occur in Hmong Njua only. [(ŋ)] is marginal, as will be described in the text.

¹Lyman 1970 and 1974 appeared after this chapter was written.

²Tape recordings prepared by Whitelock as a part of a series of Hmong Daw lessons were studied in recording equipment provided under Grant 1474 from the Wenner-Gren Foundation for Anthropological Research, to aid in linguistic analysis of Southeast Asian languages.

In the composite chart of Table 1 sequences in parentheses occur in Hmong Daw (White Meo) but not in Hmong Njua (Green/Blue Meo) or are the Hmong Daw realisations which correspond to the Hmong Njua beside them. ((ntl)) occurs in Hmong Njua but not in Hmong Daw. [(ŋ)] occurs in the Heimbach dictionary in two words (one of them with two pronunciations), but not in Bertrais. Moody reports it in Hmong Njua in one word only. It was not discovered by Barney and Smalley. Of the one word which he reports (/ŋu⁵/ <gus ɰj> 'goose'), Moody says: "My assurance that there is such a word is shaken when the women say they do not know any such word. They tend to use the word /ʔu⁵/ <us ɰ> 'duck'."

In Table 1 when the symbol h occurs alone it represents [h]. When it occurs in final position in a sequence it represents aspiration. When it is initial in a sequence it means that the following nasal or lateral is voiceless. There is, of course, no structural significance to the placing of the h in the sequence of symbols.

The lateral release in /pl/ is voiced, but in /tl/ it is voiceless and affricated [tɬ]. All segments in an aspirated sequence are voiceless except for prenasalisation. All segments in a sequence which includes prenasalisation but not aspiration are voiced. Thus, for example, /nt/ is [nd], but /nth/ is [nth].

Prenasalisation has the same point of articulation as the following stop; in addition, before [l] it is [m]. /np/ is therefore [mb]; /nkh/ is [ŋkh], etc.

Sequences represented with the symbol r have a slight voiced retroflexed affrication, and vary forward or backward in point of articulation slightly on the basis of the front or back position of the following vowel.

/y/ occurs as [j], a voiced palatal affricated stop before /i/ and as [y] elsewhere.

/x/ is a blade palatal fricative with a palatalised off-glide [ɕy].

All of the items in Table 1 occur in syllable-initial position only. The only non-vocoid finals which occur are final [ŋ], which is interpreted as nasalisation of the preceding vowel, and final [ʔ], which is interpreted as a component of tone /7/.

Moody has called to my attention a different set of articulations in the Hmong Njua community of Huay Luang near Tak where he worked. I have checked this out with one of his informants, and find that for this man, and presumably for that dialect area, the sounds of the column listed in Table 1 as "retroflexed" are tip-alveolar retroflexed. Those listed in the "palatal" column are blade-alveolar, and /x/ does not belong in that column. Those listed in the column headed "palatal - affricated release" are blade-alveopalatal, and /x/ belongs in that

column. I do not know whether this set of articulations or the one described in Table 1 is the more prevalent, nor can I be sure that if I were to listen again to the informants used to obtain Table 1, I would not change my mind about the articulations reported there. At any rate this phonetic disparity has no important bearing on the phonological system, nor does it affect the popular orthography.

A more important problem raised by Moody is that his informants make no sharp distinction between words recorded elsewhere with sounds in the "retroflexed" column and those with sounds in the "palatal-affricated release" column. In his informants the contrast is very weak or perhaps even missing, but the situation is not really clear. This seems to be decidedly a dialect difference.

Since Moody's data call these contrasts into question for Hmong Njua, I will give here some evidence for the contrast as discovered by Barney and Smalley (1952,1953). The Bertrais and Heimbach dictionaries give such overwhelming support to the contrast in Hmong Daw that there is no need to present that evidence here.

- /ri⁵/ <ris ตຣີ> 'carry on the back'
 /tʃi⁵/ <tsis ລຮີ> 'fat of meat'
 /ri⁶/ <rig ທຣີ> 'trousers'
 /tʃi⁶/ <tsig ລຮີ> 'noose'
 /ra⁶/ <rag ທຣາ> 'knife'
 /tʃa⁶ le⁶ ʃu²/ <tsag ləg suʃ ລາງ ເລັ ຟຸ> 'lightning'¹
 /ro¹/ <rob ທຣົ> 'wax, fat'
 /tʃo¹/ <tsob ລົ> 'clf. for trees'
 /rau⁴/ <rau ໂຕຣ> 'six'
 /tʃau⁴/ <tsau ໂລຣ> 'full'
 /rhua¹/ <rhuaab ນຣົ> 'broom'
 /tʃhua¹/ <tshuaab ນຮົ> 'blow'
 /nrha³/ <nrhav ນຣາ> 'seek'
 /ntʃha¹/ <ntshab ນຮົ> 'clear'
 /nrhã⁶/ <nrhaag ນຮາ> 'downward' (?) Moody: /nrã⁶/ <nraag ນຮາ>
 /ntʃhã³/ <ntshaav ນຮາ> 'blood'

The differences between Hmong Njua and Hmong Daw shown in Table 1 are of extremely low functional load. Hmong Daw has a voiceless nasal series which Hmong Njua does not have: /hm hml hn hñ/. Hmong Njua has one sequence which Hmong Daw does not have: /ntl/ <nd>. Hmong Njua /ntl/ corresponds to Hmong Daw /nt/, and Hmong Daw /hm hml hn hñ/ correspond to Hmong Njua /m ml n ñ/.

¹Moody records this word as /tʃa⁶ li⁶ su¹/ <tsag lig xub>. Whitelock does not find it in Hmong Daw at all.

In addition to these differences in inventory, there are some differences in the pronunciation of the phonemes. The most important of these are that Hmong Njua /tɪ/ corresponds to Hmong Daw /ʔd/, a pre-glottalised, voiced stop, and Hmong Njua /tɪh/ corresponds to Hmong Daw /ʔth/. The regularity of the correspondence means that this presents no great problem for a common orthographic system for the consonants.

Examples of consonants

In the preceding discussion examples have been kept to a minimum so that they could be presented below in tabular form for the sake of comparison between the dialects as well as for illustration of the occurrence of the phonemes. As much as possible, cognate forms are given as examples to enhance comparison. Of course there are many cases where the same meaning is represented by words which are not cognate in the two dialects. Unless otherwise indicated, examples are chosen from words which are identical in Barney's data, the Heimbach and the Bertrais dictionaries, and which have been checked by Moody as representing the dialect which he knows also. Transcription is in a phonemic transcription (or two phonemic transcriptions, when HN [Hmong Njua] differs in its phonemic normalisation from HD [Hmong Daw]), Roman popular orthography (which differentiates some of the phonemic differences between the dialects) and Thai orthography (which normalises the differences).

Phoneme ¹	Hmong Njua pronun.	Hmong Daw pronun. ²	Example
/p/	[p]		/pe ¹ / <peb เป> 'three'
/pɪ/	[pɪ]		/ple ³ / <plev เปล> 'sting'
/t/	[t]		/te ¹ / <teb เต> 'field'
/tɪ/	[tɪ]	[ʔd]	HN /tle ¹ / HD /ʔde ¹ / <deb เต> 'distant'
/ts/	[ts]		/tsi ³ / <txiv ตี้> 'father'
/r/	[ɹ]		/ri ⁵ / <ris ตริ> 'carry on the back'
/c/	[c ɿ]		/ce ⁶ / <ceg เจ> 'leg'
/tʃ/	[tʃ]		/tʃe ¹ / <tseb เจ> 'sow with broadcast motion'
/k/	[k]		/ke ³ / <kev เก> 'road'
/q/	[k]		/qu ¹ / <qub กุ> 'old'

¹The phoneme symbolisation is arbitrarily taken from the normalisation which follows Hmong Njua pronunciation in cases where the pronunciations differ.

²Hmong Daw pronunciation is indicated only where this differs significantly from Hmong Njua.

/ʔ/	[ʔ]		/ʔi ¹ / <ib ฐ> 'one'
/ph/	[ph]		/phe ⁷ / <phem เพ็ค> 'evil, bad'
/pɪh/	[pɪh]		/pihu ⁴ / <pihu พลุ> 'cheek'
/th/	[th]		/the ⁷ / <them เท็ค> 'pay'
/tɪh/	[tɪh]	[ʔth]	HN /tɪhɛ ³ / HD /ʔthɛ ³ / <dheev เถดิง> 'suddenly'
/tsh/	[tsh]		/tshi ³ / <txhiv ถลึ> 'redeem, ransom'
/rh/	[ɾh]		/rhaw ³ / <rhawv เกรว> 'tank, water urn' ¹
/ch/	[ch]		/che ¹ / <cheb เช> 'sweep'
/tʃh/	[tʃh]		/tʃhe ¹ / <tsheb เท> 'vehicle'
/kh/	[kh]		/khi ⁴ / <khi ศ> 'tie'
/qh/	[qh]		/qhe ³ / <qhev เข> 'servant'
/np/	[mb]		/npe ⁴ / <npe เมบ> 'name'
/npl/	[mbɪ]		/nplo ⁶ / <nplɔg มบลอห์> 'Lao'
/nt/	[nd]		/nte ³ / <ntev เนต> 'long'
/ntɪ/	[ndɪ]	does not occur	/ntlo ⁶ / <ndɔg นดอห์> 'rolls by itself'
/nts/	[ndz]		/ntsua ³ / <ntxuav นลัว> 'wash'
/nr/	[nɔ]		/nro ² / <nroj นร้อ> 'vegetation, weeds'
/nc/	[ŋj]		/nce ² / <ncej เนจ> 'post, pillar'
/ntʃ/	[ndʒ]		/ntʃe ² / <ntsej เนจ> 'ear'
/nk/	[ŋg]		/nkaw ² / <nkawj งกัว> 'wasp, hornet'
/nq/	[ŋg]		/nqɛ ¹ / <nqeeb งี้ก> 'thatch, grass for thatch'
/nph/	[mph]		/nphau ⁴ / <nphau โผ> 'turbulent'
/nplh/	[mpɪh]		/nplhai ¹ / <nplhaib โผล> 'finger ring'
/nth/	[nth]		/nthua ³ / <nthuav นถัว> 'open'
/ntsh/	[ntsh]		/ntshai ⁵ / <ntxhals ไนถล> 'daughter'
/nrh/	[nɾh]		/nrho ⁴ / <nrho นทร> 'completely, finally'
/nch/	[ŋch]		/nchua ³ / <nchuav นชัว> 'turn over, pour out'
/ntʃh/	[ntʃh]		/ntʃhai/ <ntshai ไนท> 'fear'
/nkh/	[ŋkh]		/nkhou ⁵ / <nkhaus งอ> 'twisted' ²
/nqh/	[ŋqh]		HN /nqhua (?)/ (tone uncertain) 'to dry', ³ HD /nqhua ¹ / <nqhuab งชัว> 'dried up'

¹Note Heimbach correction on p. 62 of the appendix of the 1966 edition. This analysis and my page references are all based on that earlier edition.

²Barney's notes show tone /⁶/.

³Moody has not encountered this word.

/m/	[m]		/me ⁷ / <mem เม็ค> 'ink'
/ml/	[ml]		HN /mlo ⁴ / <nlo มล> 'rough (road)'
			HD /mlo ⁷ / <nlom, mlom ¹ มล^๑ค> 'statue'
/n/	[n]		/nu ³ / <nuv หนู> 'to catch with a hook'
/l/	[l]		/le ³ / <lev เหล> 'mat'
/ñ/	[ñ]		/ño ¹ / <nyob ญ้อ> 'be at'
/ŋ/	[ŋ]		/ŋu ⁵ / <gus หง> 'goose' ²
/hm/	does not occur	[M]	/hma ⁴ / <hma ฮมา> 'wolf, wild dog'
/hml/	does not occur	[Mml]	/hmlō ⁵ / <hnlos, hmlos ³ ห้ม^๓ล> 'dented, indented'
/hn/	does not occur	[N]	/hna ¹ / <hnab ฮน้ำ> 'bag, sack'
/hl/	[ɬ]		/hli ⁴ / <hli ฮลี> 'moon'
/hñ/	does not occur	[Ñ]	/hnya ³ / <hnyav หนี> 'heavy'
/f/	[f]		/fi ⁷ / <fim ฟิค> 'to be acquainted with' ⁴
/s/	[s]		/so ³ / <xov ล> 'to fence'
/ʂ/	[ʂ]		/ʂō ¹ / <xyoob ช^๑รง> 'bamboo'
/x/	[ɕ]		/xi ⁷ / <sim ช^๑ค> 'try, test'
/h/	[h]		/hu ⁴ / <hu ฮ> 'call'
/v/	[v]		HN /vā ² / <vaaj ว่า> 'garden'
			HD /va ² / <vaj ว่า> 'garden'
/ʐ/	[ʐ]		/ʐe ² ʐo ⁵ / <zejzos เร^๒ห^๑ร> 'village'
/y/	[y j]		/yo ⁶ / <yog ย^๑ห> 'to be true'

Further consonantal correspondences between the dialects

In addition to the correspondences between the consonants of Hmong Daw and Hmong Njua already described, there are others which are less systematic (at the present state of knowledge) or more limited in distribution. Moody has supplied the following examples from his comparison of his Hmong Njua files with the Heimbach dictionary. This is not a complete set, nor have I checked it myself.

¹Second spelling is used by Bertrais.

²Reported by Heimbach and Moody but not by Bertrais or Barney. Only one other word beginning with /ŋ/ is recorded by Heimbach: /ŋi⁶/ <gig หน^๑> ~ <gog ง^๑ห> 'the sound of tigers fighting'. Moody does not recognise this.

³Second spelling is used by Bertrais.

⁴Data from Whitelock.

The most frequent such correspondence is HD/h/ = HN/f/, and in five out of the six cases supplied by Moody the correspondence occurs before /ü/:¹

HD/h ² ü/	<hwj ๓>	'bottle'
HN/f ² ü/	<fwj>	
HD/h ⁷ ü/	<hwm ๓๓>	'to respect'
HN/f ⁷ ü/	<fwm>	
HD/h ⁵ ü/	<hws ๓>	'perspiration'
HN/f ⁵ ü/	<fws>	
HD/h ³ ü/	<hwv ๓>	'bean curd'
HN/f ³ ü/	<fwv>	
HD/po ³ hü ⁷ /	<povhwm ๓๓๓>	'to protect'
HN/po ³ fü ⁷ /	<povfwm>	
HD/hua ¹ /	<huab ๓>	'cloud'
HN/fua ¹ /	<fuab>	

The other cases are more sporadic:

HD/ts/	=	HN/tsh/
HD/tsu ² ku ⁷ /	<txujkum ๓๓๓>	'how'
HN/tsh ² ku ⁷ /	<txhookum>	
HD/th/	=	HN/tsh~h/
HD/thia ² /	<thiaj ๓>	'consequently'
HN/tsha ⁵ ~ha ⁵ /	<txhas~has>	
HD/tsh/	=	HN/s/
HD/tsho ¹ /	<txhob ๓>	'don't'
HN/so ¹ /	<xob>	

Vowels

i	ü	u
e		o
HN/ě/ = HD/ǎ/	HN/ǎ/ = HD/a/	õ
HN/a/ = HD/ia/		ua
ai	aü	au
	(ü)	(õ)

Table 2. Vowels

¹In Thailand many Hmong Daw say <foob>. In Laos Hmong Daw and Hmong Njua say <hoob> (Whitelock).

In the composite chart of Table 2, items in parentheses occur only in Heimbach in our data, and with only one word for each. I have heard them, and there is no doubt of their occurrence, in spite of their extra-systematic nature. / $\tilde{ɔ}$ / is particularly unusual in that it is phonetically a nasalised vowel without a following [ŋ] or a preceding nasal consonant. Both / \tilde{u} / and / $\tilde{ɔ}$ / follow /h/ only. Both occur in words which are final particles. Note the following set of Hmong Daw contrasts:

- /h \tilde{u} ³/ <hwwv 𐌸𐌶> 'intensive final particle'
 /h \tilde{u} ³/ <hvv 𐌸> 'graze on stubble'
 /hu³/ <huv 𐌸> 'all together'
 /h $\tilde{ɔ}$ ⁴/ <hoo 𐌸𐌶> 'red-bellied squirrel'
 /h $\tilde{ɔ}$ ¹/ <hoob 𐌸𐌶> 'bomb, grenade'
 /h $\tilde{ɔ}$ ⁵/ <hons 𐌸𐌶> 'final particle'
 /ho⁵/ <hos 𐌸𐌶> 'initial particle'

There is a regular set of vowel correspondences between Hmong Njua (Green Meo) and Hmong Daw (White Meo):

HN		HD
$\tilde{ɔ}$	=	\tilde{a}
\tilde{a}	=	a
a	=	ia

Pictured another way, the left-hand phoneme of each equation in the following series is Hmong Njua and the right-hand phoneme is Hmong Daw:

$$\text{HN } \tilde{ɔ} = \tilde{a} = a = ia \text{ HD}$$

/ \tilde{u} / is front-central, slightly rounded, in Hmong Njua, somewhat farther back in Hmong Daw, although both range in front-to-back position somewhat. /e/ is [ey], with the degree of tongue movement greater on glided tones. /o/ is [ɔ]. The approximate values of the vowel glides are /ia/ = [iə], /ua/ = [uə], /ai/ = [ay], /a \tilde{u} / = [æ \tilde{u}] in Hmong Njua, and a slightly rounded [ə $\tilde{ɔ}$] in Hmong Daw, /au/ = [ɔw].

Nasalised vowels differ somewhat in their pronunciation in the two dialects. In Hmong Daw, with the exception of / $\tilde{ɔ}$ / already discussed, these vowels are both nasalised and followed by [ŋ]. The velar nasal feature occurs only on / \tilde{a} / in Hmong Njua. Vocalic qualities also differ slightly. In Hmong Njua / $\tilde{ɔ}$ / is [ɔ̃w], but in Hmong Daw it is [ɔ̃ŋ]. All vowels are non-phonemically nasalised without final [ŋ] after nasal consonants and prenasalised consonants in Hmong Daw. I do not have record of such nasalisation in Hmong Njua, but cannot be sure that it does not occur.

In some dialects of Hmong Njua the most obvious allophonic differences in any vowel are in /i/. In one dialect [ɨ] occurs after /ts nts

tsh ntsh s tš ʃ ntš/, while [i] occurs elsewhere. In another dialect, [i^ʰ] (slightly backed) occurs after this list of consonants when the tone is /¹ ² ³ ⁴/, while [ɨ] occurs with the remaining tones after these same consonants. [i] occurs with other consonants. Moody has called to my attention still another dialect in which [ɨ] occurs after /ts nts tsh ntsh s/, [ɨ⁺] (with friction) after /r tš tšh ntš ntšh ʃ/, and [i] elsewhere.

Examples of vowel phonemes

Phoneme	Hmong Njua pronun.	Hmong Daw pronun.	Example
/i/	[i ɨ] etc.	[i]	/ti ¹ / <tib ติ> 'pile up'
/ü/	[ü]	[ɨ]	/tü ⁷ / <twm ติ> 'buffalo'
/u/	[u]		/tu ¹ / <tub ติ> 'son'
/e/	[ey]		/te ¹ / <teb เต> 'field'
/o/	[ɔ]		/to ² / <toj โต> 'hill'
/a ia ã ẽ/	[a]	[ia]	HN /ta ¹ / <tab เตย> ¹ 'skirt'
			HD /tia ¹ / <tiab เตย> 'skirt'
	[ãŋ]	[a]	HN /pã ¹ / <paab ปา> 'help'
			HD /pa ¹ / <pab ปา> 'help'
	[ẽy]	[ãŋ]	HN /tšẽ ¹ / <tseeb เจียง> 'truly, clearly'
			HD /tšẽ ¹ / <tseeb เจียง> 'truly, clearly'
/ũ/	does not occur	[ɨŋ]	HD /hũ ³ / <hwwv หิง> 'intensive final particle'
/õ/	[õw]	[õŋ]	/põ ¹ / <poob ปิง> 'fall'
/õ̃/	does not occur	[õ]	/hõ̃ ⁵ / <hons หอง> 'final particle'
/ua/	[ua]		/tua ² / <tuaj ตัว> 'come'
/ai/	[ay]		/tsai ² / <txaij ไต> 'varicoloured'
/aũ/	[aũ]	[aũ]	/taũ ¹ / <tawb เตว> 'basket'
/au/	[ɔw]		/tau ⁴ / <tau โต> 'be able'

Exceptions to vowel correspondences

As is to be expected, there are some exceptions to the vowel correspondences between Hmong Daw and Hmong Njua in the preceding discussion. Moody has checked every occurrence of HD/ã a ia/ in the Heimbach

¹For reasons which will be discussed later, the Thai script transcription for both dialects follows Hmong Daw pronunciation when there are automatic sound correspondences.

dictionary against his own Hmong Njua files, and finds only the following short list of exceptions to these correspondences:

HD/ia/ = HN/e a/¹

HD/kia²kia⁷/ <kiajkiam เขี้ยวเขี้ยว> 'boundary'

HN/ke⁷ka⁷/ <kemkam>

HD/ia/ = HN/ã/

HD/phia¹/ <phiab เขี้ยว> 'basin'

HN/phã¹/ <phaab>

HD/ia/ = HN/ẽ/

HD/tshia⁴/ <txhiab เขี้ยว> 'thousand'

HN/txhẽ¹/ <txheeb>

HD/ia/ = HN/ua/

HD/tshia⁴/ <txhia เขี้ยว> 'all'

HN/tshua⁴/ <txhua>

HD/qho³tshia⁴chaü⁴/ <qhovtxhiachaw หมอเขี้ยวเขี้ยว> 'things'

HN/ho³tshua⁴chaü⁴/ <hovtxhuachaw>

HD/qho³tshia⁴qho³chaü⁴/ <qhovtxhiaqhovchaw หมอเขี้ยวหมอเขี้ยว> 'everywhere'

HN/ho³tshua⁴ho³chaü⁴/ <hovtxhuahovchaw>

HD/ã/ = HN/ã/

HD/nplã⁷/ <npleem เมบลิ้งค์> 'to slip'

HN/nplã⁷/ <nplaam>

In addition, there are cases where the vowels in the two dialects would be expected to be the same according to the composite charts above, but they are not. Moody has not made a full list of such cases, but has supplied me with the following sampling:

HD/a/ = HN/e/

HD/ca²tla¹/ <cajdab จ้าด้า> 'neck'

HN/ce²dã¹/ <cejdaab>

¹Moody also reports [æ] in four frequently occurring Hmong Njua words, which I have not had an opportunity to check. The fact that they all occur with the same tone might be indicative that the vowel difference is not contrastive.

HD/mia⁵?ia⁵/ <mias-ias หมูเหี้ยว> 'goat'

HN[mæ⁵?æ⁵]

HD/?a⁵/ <as ฮ่า> 'final particle'

HN[?æ⁵]

HD/la⁵/ <las หล่า> 'completive particle'

HN[læ⁵]

HN[tæ⁵] 'connective particle'

- HD/ai/ = HN/a/ .
 HD/hai⁵/ <hais ไห> 'to speak'
 HN/ha⁵/ <has>
- HD/au/ = HN/u/
 HD/tshau³/ <txhauv โถลว> 'millet'
 HN/tshu³/ <txhuv>
- HD/o/ = HN/u/
 HD/tso⁵/ <txos ตล่อ> 'fireplace'
 HN/tsu⁶/ <txug>
- HD/o/ = HN/ü/
 HD/ko⁴tü⁴/ <kotw กอติ> 'tail'
 HN/kü⁴tü⁴/ <kwtw>
- HD/o/ = HN/ua/
 HD/ko⁷/ <kom กอค> 'to cause;
 HN/kua⁵/ <kuas>
- HD/i/ = HN/u/
 HD/thau⁷?i⁴/ <thaum-i โทวคื> 'previously'
 HN/thau⁴?u⁴/ <thau-u>
- HD/i/ = HN/e/
 HD/fi⁷/ <fim ฟิค> 'to meet'
 HN/fe⁷/ <fem>
- HD/u/ = HN/oo/
 HD/mu⁵/ <mus หมู่> 'to go'
 HN/mö⁶/ <moog>
- HD/ü/ = HN/i/
 HD/sü¹kua¹/ <xwbkuab ขี้กว> 'gourd'
 HN/si¹kua¹/ <xibkuab>
- HD/ua/ = HN/u/
 HD/ntšua⁵phō/ <ntsuasphoo นิลัวพง> 'a lock'
 HN/ntšu⁶phō²/ <ntsugphooj>

Tones

The approximate values of the tones in final stressed position are shown in Table 3, overleaf.

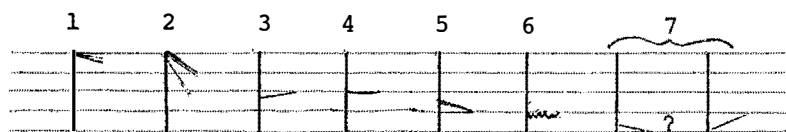


Table 3. Tones

The second form of tone 7 is recorded as a separate phoneme by both Bertrais and Heimbach, and they both indicate its marginal character. Heimbach (1966:14-16) gives about two pages of description of morphophonemic alternation between the two contours, based on syntactic conditions. He concludes, however, that not always can he account for the conditioning factors, and lists a total of 16 words with this "eighth tone" in his dictionary. All of them have counterparts with his tone 7. In Heimbach's dictionary the tone with the next smallest number of occurrences is tone 6, with 239 occurrences. For the purposes of this paper I would prefer to account for this additional phonetic contour by morphophonemic rules and even the postulation of a juncture, and do not include it as a separate phoneme.

Heimbach also lists two words in his dictionary with a pitch feature which he writes with <x>. He calls this pitch a "special intonation" (1966:13-14; appendix:1-2), and describes it as an intonational feature, changing the basic tone of the final word of a phrase, with a meaning of wonder or awe. For one of the two words listed with this "tone" in the dictionary Heimbach gives an alternative with tone 5: <lox> (130). For the other he was presumably not able to determine a basic tone: <yuax> 'completive particle'. Whitelock reports that her informants do not recognise the word. It was doubtless obtained by Heimbach in text where the intonation was a feature. We will assume here that this pitch is best handled as intonation in spite of this example.

The following phonetic descriptions of the tones are based on final stressed position. Two of the tones are marked by other strong features in addition to pitch. /⁶/ is "breathy", caused by an enlarged laryngeal cavity and doubtless a special configuration of the vocal cords. /⁷/ is terminated by a glottal stop [ʔ], and is characterised by shortened vowel length, except under the morphophonemic conditions described by Heimbach (and perhaps preceding a postulated phonemic juncture). Both of these are in a low pitch range. Their relative positions can be seen in Table 3. The pitch is level or slightly falling, the falling probably due to junctural conditioning.

The remaining tones are more purely characterised by pitch distinctions alone so far as my ears can tell. /¹ ³ ⁵/ are level (or slightly

falling, perhaps because of juncture) high, mid, and low. /²/ falls from a high position. /⁴/ rises from a position slightly below mid. The second contour for /⁷/ rises from a low position.

Examples of tone phonemes

Phoneme	Pronun.	Example
/ ¹ /	┐	HN/pā ¹ / <paab ป้า> 'to help' HD/pa ¹ / <pab ป้า> 'to help' HD/po ¹ / <pob ป้อ> 'lump, ball-like'
/ ² /	┑	HN/pā ² / <paaจ ป้า> 'flower' HD/pa ² / <paj ป้า> 'flower' HD/po ² / <poj ป้อ> 'female'
/ ³ /	└	HN/pā ³ / <paav ป้า> 'to tie' HD/pa ³ / <pav ป้า> 'to tie' HD/po ³ / <pov ป้อ> 'to throw'
/ ⁴ /	┘	HN/pā ⁴ / <paa ป้า> 'breath' HD/pa ⁴ / <pa ป้า> 'breath' HD/po ⁴ / <po ป้อ> 'pancreas' ¹
/ ⁵ /	┐	HN/pā ⁵ / <paas ป้า> 'rod' HD/pa ⁵ / <pas ป้า> 'rod' HD/po ⁵ / <pos ป้อ> 'thorn'
/ ⁶ /	┘	HN/pā ⁶ / <paag ป้า> 'expanse of water' HD/po ⁶ / <pog ป้อ> 'paternal grandmother'
/ ⁷ /	└?	HN/pā ⁷ / <paam ป้า> 'feast' HD/po ⁷ / <pom ป้อ> 'to see'

Tone correspondences between dialects

As implied in the above description, normally cognate words in Hmong Daw and Hmong Njua have the same tone. However, correspondences are considerably more irregular in the tones than in the consonants or vowels. Moody has supplied some examples of a variety of such correspondences. The list is not complete, nor have I checked it personally.

The most frequent correspondence when two different tones are involved is HD/⁵/ = HN/⁶/. Furthermore, three out of the twelve correspondences supplied by Moody involve HN/⁶/, and two of them HD/⁶/.

¹Heimbach has 'spleen', but Whitelock agrees that the meaning is *pancreas*.

Three of the correspondences involve HD/⁵/, and three HN/⁵/. /⁵ ⁶/, therefore, are involved in all but two of the twelve sets. HD/⁷/ is involved in two sets, and HN/⁷/ in one. Here are examples of each of the correspondences supplied by Moody:

HD/⁵/ = HN/⁶/

HD/ʒe⁵/ <zes เหร> 'nest'

HN/ʒe⁶/ <zeg>

HD/mu⁵/ <mus หมู> 'to go'

HN/mō⁶/ <moog>

HD/lǎ⁵/ <lees เหล่า> 'to admit'

HN/lǎ⁶/ <leeg>

HD/⁷/ = HN/⁶/

HD/ca²ntšü⁷/ <cajntswm จานีศ> 'nose ridge'

HN/cā²ntšü⁶/ <caajntswg>

HD/⁴/ = HN/⁶/

HD/nphō⁴/ <nphoo มพ> 'jostle (in a crowd)'

HN/nphō⁶/ <nphoog>

HD/⁶/ = HN/³/

HD/ntsua⁶/ <ntxuag นข้าว> 'meat or vegetables eaten with rice'

HN/ntsua³/ <ntxuav>

HD/⁶/ = HN/²/

HD/tli¹pa⁶/ <dibpag ดีป> 'melon'

HN/?di¹pā²/ <dibpaa>

HD/⁷/ = HN/⁵/

HD/ko⁷/ <kom กอ> 'to cause'

HN/kua⁵/ <kuas>

HD/¹/ = HN/⁵/

HD/šī¹/ <sib ชี> (preverbal of reciprocal action)

HN/šī⁵/ <sis>

HD/⁴/ = HN/⁵/

HD/nta⁴/ <nta นตา> 'middle finger'

HN/ntā⁵/ <ntaas>

HD/⁵/ = HN/⁷/

HD/lo⁵šī⁵/ <lossis หล่อสี่> 'very'

HN/lo⁵šī⁷/ <lossim>

HD/⁵/ = HN/⁴/

HD/nplo⁵/ <nplos มปล> 'to stick'

HN/nplho⁴/ <nplho>

$HD/{}^2/ = HN/{}^4/$
 $HD/qe^2/ <qej \text{ ໔໓} > \text{ 'garlic'}$
 $HN/qe^4/ <qe>$
 $HD/{}^4/ = HN/{}^2/$
 $HD/ph\check{o}^4/ <phoo \text{ ໓} > \text{ 'lock'}$
 $HN/ph\check{o}^2/ <phooj>$

Syllable structure

The typical Hmong syllable consists of two parts, an onset and a peak. Onsets may be nul (zero), simple, or complex. Peaks consist of a syllabic and a tone. The syllabic may be simple or complex. We are here avoiding the problem of whether or not the phonetically complex consonants and vowels described in Tables 1 and 2 are single phonemes or clusters, because this theoretical problem has no relevance for our purposes. In the Thai orthography we have to write them in the manner closest to the Thai system. Tones may be simple or complex.

Statements on limitations of distribution which follow apply to Hmong Daw (White Meo) only, as I did not have a sufficient volume of accurate data when this paper was written¹ to make such statements for Hmong Njua. They are based on the Heimbach and Bertrais dictionaries. Syllables with zero onset are rare, and belong to a special subclass of final particles. Heimbach records them with an initial <'>, which in his transcription means that there is no initial consonant. He has only six such entries. Bertrais does not make the distinction. Very possibly zero onsets would be better analysed as conditioned by a juncture. In both dictionaries words recorded without an initial consonant have an initial glottal stop. Simple and complex onsets are recorded in Table 1.

Complex onsets are created by aspiration, prenasalisation, or both. Or, they are created by lateral or affricated release. Complexity caused by aspiration, nasalisation or lateral release is indicated in the symbolisation. Affrication is not always so indicated. /r/, for example, has an affricated release.

Complex syllabics result from vowel glide or from nasalisation, as may be seen in Table 2 and the phonetic description which follows it.

Complex tones are a combination of pitch with breathiness or with glottalisation.

¹Lyman 1970 and 1974 had not yet appeared, and the dictionary files of Moody and Rulison were not readily available to me.

In general, any onset may occur with any syllabic. The exceptions to this are those cases where the onsets are very rare. Two important examples are zero onset and /ŋ/. In Heimbach's dictionary zero onset occurs only with /au o/. His total inventory of entries with zero onset is as follows: /au¹/ <'aub ໂອ້> '*final exclamatory particle*', /au²/ <'auj ໂອ້> '*final emphatic particle*', /au³/ <'auv ໂອ້> '*final emphatic particle*', /o²/ <'oj ອ້> '*final question particle*', /o⁵/ <'os ອ້> '*final emphatic particle*', /o³/ <'ov ອ້> '*final emphatic particle*'.

/ŋ/ is likewise a marginal phenomenon, as we have already seen.

Whereas neither zero onset nor /ŋ/ is recorded by Bertrais, there are some onsets recorded by both dictionaries which are likewise so rare that the onset does not occur with all syllabics. Here is a list of all such other onsets followed by the syllabics with which they do not occur in either dictionary. The order is alphabetical by onset.

/ʔth/ is not followed by /ai ǝ/, /f/ by /u/, /hl/ by /ã/, /hm/ by /ai au aũ ã e i ia ua ü/, /hml/ by /ai au e i ia ǝ ua ü/, /hn/ by /ai au aũ i ua ü/, /hñ/ by /ai au i ü/, /m/ by /aũ ü/, /ml/ by /ai au aũ ã e ia ü/, /n/ by /aũ/, /nch/ by /ã e ü/, /nk/ by /e/, /nkh/ by /ai e ia u ua ü/, /nph/ by /ai ã e ia u/, /npl/ by /u ü/, /nplh/ by /a aũ ã e ia u ua ü/, /nq/ by /i ǝ/, /nqh/ by /ai au aũ ã e ia ü/, /nrh/ by /e ua ü/, /nth/ by /ai au ia/, /ntšh/ by /e ǝ ü/, /ntsh/ by /au/, /pl/ by /ü/, /plh/ by /a ai ã ia ǝ/, /qh/ by /ã/ or /š/ by /ai ia/.

In Hmong Daw¹ limitations on distribution of tones with onsets show one clear pattern and some strong tendencies. The clear pattern is in the distribution of tone /⁶/, which does not occur with any onset which in Table 1 is transcribed with an /h/ symbol as any part of the sequence,² or with /f s š x/. It does occur with all the others. This symmetrical division of the consonants may be seen in Table 4. Included also in Table 4, under the symbols for the onsets, is a notation of the tones other than /⁶/ which do not occur with any particular onset. These other limitations on distribution show another pattern which is not quite so consistent, namely that aspirated nasals and aspirated prenasalised stops tend not to occur with tones /⁷ ²/, sometimes with neither, sometimes only with one or the other. In fact, for /nth/, in the Heimbach dictionary /⁷/ is missing, whereas /²/ is missing in the Bertrais dictionary.

¹Moody's dictionary file of Hmong Njua shows some differences of distributional pattern from the following statements, which will warrant checking.

²The one exception in the Heimbach dictionary is /ŋqhu⁶/ <ŋqhug ພູ້> '*restricted post-verbal intensifier*', which Whitelock has not been able to identify.

p	pʰ	t	ʔd	ts	r	c	tʃ	k	q	ʔ
np	npl	nt		nts	nr	nc	ntʃ	nk	nq	
m	ml	n	l			ɲ				
v					ʒ	y				
<i>Onsets which occur with /⁶/</i>										
ph	plh	th	ʔth	tsh	rh	ch	tʃh	kh	qh	
			/¹/							
nph	nplh	nth		ntsh	nrh	nch	ntʃh	nkʰ	nqʰ	
/² ⁷/	/⁷/	/²~⁷/		/⁷/	/⁷/	/¹ ² ⁷/	/⁷/	/² ⁷/	/² ³ ⁷/	
hm	hml	hn	hl			hny				
/² ⁷/	/¹ ⁷/	/²/	/⁷/			/⁷/				
f		s			ʃ	x				h
<i>Onsets which do not occur with /⁶/</i>										

Table 4. Other restrictions in occurrence of tones
with onsets shown under the individual
consonants

The distributional facts represented in Table 4 lend considerable weight to interpreting all of the sounds in the upper half of the table as phonemically based on voiced norms, and all of those in the lower half as phonemically based on aspirated norms. In fact, in the upper half all are phonetically voiced except the first line, and in the lower half all are phonetically aspirated except the last line. Thus, our /p/ would be interpreted as /b/, /ph/ as /bh/, /f/ as /vh/, etc. I suspect that such an analysis would be of interest in historical studies¹ and would give a simpler description for presentation in terms of distinctive features or other current systems of phonological analysis, but for our orthographic objectives here it would draw us farther from the phonetic actualisation and would be less useful.

All syllabics except those within parentheses in Table 2 occur with all tones.

¹See Purnell 1970; Haudricourt 1954:555-76; Chang 1953; Downer 1967.

Frequency of phonemes

The gaps in combinations of onsets with syllabics in the syllable structure are related to overall frequencies of distribution of the respective items. Table 5 gives the list frequency of each onset in the Heimbach dictionary¹ in the first line of figures under each onset, and text frequency in twelve foolscap pages of text in the second line of figures.²

Table 6 gives the list frequencies for vowels in the Heimbach dictionary, and Table 7 the list and text frequency (based on the same text as for the onsets) for tones. In some cases the list frequency indicates a more limited distribution than is detailed above in the list of limitations on combinations of onsets with syllabics. This is due to the fact that the frequencies are based on Heimbach alone, but the limitations of distribution were a composite listing from the two dictionaries.

As is to be expected, the less frequent onsets are the ones with the greater limitations of distribution with syllabics. The relation of onsets to tones is limited more structurally than statistically, but rare onsets like /ʔth nch/ show lack of co-occurrence which may be due simply to the rarity of the onset.

Zero onset

6
0

p	pl	t	ʔd	ts	r	c	tʃ	k	q	ʔ
69	41	88	57	70	47	68	76	71	67	38
113	5	625	114	155	154	90	305	310	28	245
ph	plh	th	ʔth	tsh	rh	ch	tʃh	kh	qh	
41	13	51	11	50	20	29	49	50	28	
11	2	179	3	27	1	8	6	12	62	
np	npl	nt		nts	nr	nc	ntʃ	nk	nq	
37	28	59		41	52	42	60	35	23	
10	3	180		20	17	16	49	11	10	
nph	nplh	nth		ntsh	nrh	nch	ntʃh	nkh	nqh	
11	5	16		20	12	9	16	9	5	
0	0	0		0	20	1	9	1	6	

Table 5 - continued

¹The Heimbach dictionary lists every phonemic syllable only once, and then enumerates different meanings under this single entry. The count therefore is not a count of morphemes, but of syllables.

²The text was recorded from informants in Khao Khat (เขากะหาด), Lomsak, known to the Meo themselves as /koka/ (Cawca), one of the communities where Heimbach worked. Counts were made by Gillian Orpin.

m	mi	n	l		ñ	ŋ
43	5	47	81		37	3
268	1	314	515		25	0
hm	hmi	hn	hl		hñ	
10	1	13	35		7	
7	0	24	27		0	
f		s		š	x	h
29		51		58	25	55
8		54		154	17	292
v				ž	y	
39				56	64	
45				52	334	

Table 5. Consonants

The first line of figures shows list frequency based on Heimbach, and the second line shows frequency based on twelve pages of text.

i	ü	u
174	137	155
e	a	o
135	220	233
	ã	õ
	137	156
ia		ua
159		205
ai	aw	au
98	166	179
i ~ e ¹	(ü)	(õ)
6	1	1

Table 6. Vowels. Showing list frequency based on Heimbach.

1	2	3	4	5	6	7
351	295	354	312	339	239	277
704	649	714	927	1156	397	456

Table 7. Tones. Showing list and text frequency.

¹Heimbach records six words as alternating freely between /i/ and /e/. We have therefore recorded them separately.

Other features

Stress, juncture, intonation and other possible phonological features have not been adequately analysed, and are not further reported here. Heimbach discusses one intonational pattern (Heimbach 1966:13,14), and hints of junctural possibilities have been made above. Lack of this information is probably no serious loss for the popular orthography, which seems to operate perfectly well without reflecting a full range of such distinctions, as do most orthographies.

Romanised orthographic systems for Hmong

As described near the beginning of this chapter, the Roman letter orthography used in the two dictionaries has been in use among the Hmong in Laos for twenty years, although it is known by less than one hundred Hmong in Thailand. In this section the Roman letter orthography will be discussed briefly. Following that, the suggestions for a Thai-based orthography will be taken up in detail.

In Table 8 I repeat the contents of Tables 1-3 with the orthographic conventions of the Romanised system in < > where these differ from the phonemic transcription used in this paper. Where no symbol in < > is to be found, the symbol used in the chart to represent the phoneme is used for the popular orthography also.

Tones are marked by letters at the end of the syllable. Thus, the tone in /pɔ̃¹/ 'fall' is written with at the end of the syllable: <poob>. Tone 4 is unmarked. In the first syllable of a compound, if there is confusion with the following initial consonant symbol, Tone 4 may be marked with <-> instead.

The use of <x> for /s/ resulted from a compromise between what Barney and Smalley were suggesting for orthography and what Bertrais was already using. His usage here was patterned after Vietnamese.

The basic principle followed in the Roman letter system for writing the differences between Hmong Daw (White Meo) and Hmong Njua (Green/Blue Meo) was to write the sounds of the two languages the same way when they were pronounced the same, or sometimes when there was a correspondence such that all occurrences in the one corresponded with an equivalent set of occurrences in the other. Thus, /p/ was written <p> in both because it sounds the same in both, and HN/tɨ/ and HD/?d/ were written <d> in both because all occurrences of HN/tɨ/ correspond with all occurrences of HD/?d/ (except for the possibility of a few words which are completely unrelated). For such correspondences as HN/m/ = HD/hm/ the two were written differently in the two dialects, <m> and <hm> respectively, because the correspondence HN/m/ = HD/m/ also occurred.

p	pi	t	tl(?d)	ts	r	c	tʃ	k	q	?
			<d>	<tx>			<ts>			< > ¹
ph	plh	th	tlh(?th)	tsh	rh	ch	tʃh	kh	qh	
			<dh>	<txh>			<tsh>			
np	npl	nt	((ntl))	nts	nr	nc	ntʃ	nk	nq	
			<nd>	<ntx>			<nts>			
nph	nplh	nth		ntsh	nrh	nch	ntʃh	nkx	nqh	
				<ntxh>			<ntsh>			
m	ml	n	l			ñ		[ŋ]		
	<nl> ²					<ny>		<g> ³		
(hm)	(hml)	(hn)	hl			(hñ)				
	<hnl> ²					<hny>				
f		s			ʒ	x				h
		<x>			<s>	<xy>				
v					ž	y				
					<z>					

Consonants

i	ü	u
	<w>	
e	a	o
HN/ě/ = HD/ǎ/	HN/ǎ/	õ
<ee>	<aa>	<oo>
HD/ia/		ua
a i	aü	au
	<aw>	
	(ü) ³	(õ) ³
	<ww>	<on>

Vowels

┌	┐	└	┘	├	┤	├	┤
1	2	3	4	5	6	7	8
	<j>	<v>	< >	<s>	<g>	<m>	<d> ³

Tones

Table 8. Roman orthography

¹No symbol is used for /ʔ/. Zero onset is marked by <'> in Heimbach.²Spelling used by Heimbach, but not by Bertrais, who uses <ml hml>.³Occurs in Heimbach, but not in Bertrais.

It had not yet occurred to me that by writing HN/m/ = HD/hm/ words as <hm> in both dialects the writing systems could be brought even closer together, and it would be easier for each dialect to read material written in the other dialect. Using the principle of writing the dialect of greatest diversity, there need be no difference of spelling between the dialects.

The principle of writing the greatest diversity (Smalley 1958) is based on the assumption that we should strive for reading ease above spelling ease. If, in these two dialects, all HN/m/ = HD/m/ words are written <m>, and all HN/m/ = HD/hm/ words are written <hm> the reading will be unambiguous for both dialects, but the spelling will be over-differentiated for Hmong Njua (as Hmong Njua will have two spellings for the /m/ sound in that dialect).

Table 9 lists the automatic correspondences in consonants and vowels where these are not the same in the two dialects, and the spellings which might have been applied to them to make for a uniform Romanised spelling for the two. All of the suggested spellings are Hmong Daw spellings. This means that everything would be spelled in the Hmong Daw pronunciation, and Hmong Njua primers would be constructed to teach these conventions. With well-constructed primers they should cause no difficulty.

Of course, both dialects have irregular correspondences, as have been discussed under each of the headings of consonant, vowel, and tone. There are, in addition, words which do not correspond phonologically with the word of the same meaning in the other dialect, words which are not cognate at all. This remains a problem for common literature. On the simpler levels of learning, the literature would have to be adapted as to vocabulary from one dialect to the other. Since the Hmong people intercommunicate on the oral level, however, any skilful reader should be able to read material in the vocabulary of the other dialect spelled by the system we are advocating in this principle.

In one instance in Table 9 we have violated this principle of writing the greatest diversity. It is in the case of Hmong Njua /ntl/ <nd> = Hmong Daw /nt/. There is also a correspondence /nt/ = /nt/, and by our principle we should write <nd> for /ntl/ = /nt/ in both dialects. If the correspondence was a frequent one and carried a high functional load it would be better to follow the principle here also, but by abandoning it at this point we can spell all words directly as they are in Hmong Daw, and not have to have a list of these words to keep in mind. In other words, the diversity is overwhelmingly on the Hmong Daw side, which requires that almost everything be written in the Hmong Daw way. In the case of the HN/ntl/ = HD/nt/ correspondence, I believe it would

be less troublesome all around to wash out the contrast for Hmong Njua. However, the distinction should be kept in early reading materials prepared specifically to help Hmong Njua new readers before they are ready for the standardised materials.

HN		HD	Suggested Composite Spelling
nt	=	nt	<nt>
ntl <nd>	=	nt	<nt>
m	=	m	<m>
m	=	hm	<hm>
ml	=	ml	<ml>
ml	=	hml	<hml>
n	=	n	<n>
n	=	hn	<hn>
ñ <ny>	=	ñ <ny>	<ny>
ñ <ny>	=	hñ <hny>	<hny>
ẽ <ee>	=	ã <ee>	<ee>
ã <aa>	=	a <a>	<a>
a <a>	=	ia <ia>	<ia>

Table 9. Spelling of automatic correspondences of consonants and vowels between Hmong Daw and Hmong Njua when the dialects differ

As has been already shown, tone correspondences between Hmong Daw and Hmong Njua are predominantly consistent, but show more random variation than do the consonant or vowel systems. For a composite transcription, when a word differs in tone between the two it should be written in the Hmong Daw way simply to maintain a consistent base or standard for the spelling. Unlike some of the other decisions in favour of Hmong Daw above, this one has no basis in the linguistic facts as I see them, but only a practical base.

In cases of words which are not cognate between the two dialects (that is, where there is not a correspondence of both form and meaning but where the two have entirely different words for the same meaning), the word should be used which is appropriate to the dialect being written. Our suggestions are for a unified spelling, not for the elimination of lexical or syntactic features of either dialect from written material. The fact that there is likely to be more literature in Hmong Daw than Hmong Njua may bring about the dominance of Hmong Daw words and patterns in written materials and in time make it the standard for

writing Hmong, but if that comes about it should come about through usage and not through the forcing of an artificial style on Hmong Njua writing, even if it were possible to do so.

A common spelling will, of course, also create problems with some words where two different meanings are pronounced and written alike in Hmong Daw, but pronounced differently in Hmong Njua. In such cases there may be ambiguity for the Hmong Njua reader if the context is not strong enough to establish the difference. Thus

HD/ko⁷/ <kom กอค้> 'to accuse'¹

HN/ko⁷/ <kom>

but

HD/ko⁷/ <kom กอค้> 'to cause'

HN/kua⁵/ <kuas>

The converse (Hmong Daw pronunciation and writing differ, but Hmong Njua does not) creates no ambiguity for the Hmong Njua reader, but he will have spelling problems. For example

HD/tu¹/ <tub ທູ> 'son'

HN/tu¹/ <tub>

but

HD/tü¹/ <twb ທູ> 'already'

HN/tu¹/ <tub>

Whether or not the above proposals for a common spelling for the two dialects are possible will have to be tested, of course, tested on the Hmong Njua on whom the burden of adaptation from their phonemic patterns falls. Moody has strong doubts that such a common spelling is feasible, or that it would be acceptable to the Hmong Njua for reasons of cultural pride. On the other hand, the Hmong Njua are much more likely to have material to read if they are part of a larger spelling community than if they are alone. Only time and experimentation can decide, and so long as there continues to be little widespread interest in literacy, results are inconclusive.²

The Hmong Njua will most certainly need literacy materials which are designed especially for their dialect, and which not only teach the normal basic reading skills, but also the skills of adapting when the

¹Examples from Moody.

²In the years since this chapter was written the people involved with actual literature programmes among the Hmong Njua both in Thailand and in Laos have become convinced that the dialects should be written differently with respect to HN/ä/ = HD/a/ and HN/a/ = HD/ia/ (Table 2). This is the difference which causes the major difficulty in transfer to Thai. Whitelock feels that HN/ä/ should be written as <~ä> (whereas in this chapter it is written <-ä> following HD/a/); she also feels that HN/a/ should be written as <-ä> (whereas in this chapter it is written <~ä> following HD/ia/).

spellings do not correspond with their phonemic system. They will also need easy transitional reading material which is controlled to keep these problems to a minimum, if they are to use such an orthography.

It is with these principles in mind that we go on to discuss the writing of Hmong in Thai script, suggesting the same spelling system for both dialects although Hmong Daw is the only one in which experimentation has taken place. Such a system has been used throughout this paper in all the examples given.

Comparison of Hmong and Thai phonology

When the Hmong and Thai phonemic systems are compared as systems they immediately show up as extremely different. Hmong has more tones, and they are of different phonetic values to a considerable degree. Thai has many more vowel contrasts, including long and short varieties, a distinction which Hmong does not have. Unlike Thai, Hmong has nasalised vowels as phonemically distinct from oral ones, and has a much greater tendency to vowel glides. The phonetic qualities of the vowels in the two languages tend to be quite different. Hmong has no syllable-final consonants except as features of tone or nasalisation, whereas Thai does. Then, standing out above everything else which is different between the two, Hmong has sixty-one onsets (Table 1 plus zero onset), whereas Thai has thirty-two, as analysed by Noss.¹ A few additional ones exist in Thai in borrowings from other languages. Not only does Hmong have about twice as many onsets as Thai, but these onsets form an entirely different type of system from the Thai system, with points of articulation and manners of articulation which are not a part of Thai. Compare Table 1 with Table 10, which gives the Thai onsets listed by Noss.

p	pl	pr	t	tr	c	k	kl	kr	kw	?
ph	phl	phr	th	thr	ch	kh	khl	chr	khw	
w	l	r			y					
f			s							h
m			n			ŋ				
b			d							

Table 10. Chart of Thai onsets

When the Hmong and Thai phonological systems are compared not from the standpoint of their structural similarities and differences, but

¹Noss 1964:5. Noss omits examples of /w f/ here, but rightly includes them in his chart on page 8. /r/ as an onset is marginal, although taught in the schools.

from the phonetic features which they share, the difference is not quite as great. Hmong, for example, has no structural final consonants, but it does have phonetic final [ŋ] as the actualisation of nasalisation (with some exceptions in Hmong Njua, described above).

In other words, Hmong does not differ from Thai from the standpoint of features of pronunciation quite as much as it does from the standpoint of phonemic structure, although there is still considerable difference. Such facts somewhat simplify the problem of transcribing Hmong in Thai script, although they certainly do not eliminate all of the difficulties.

Thai writing system for Hmong¹

In Table 11 we present the system of writing the Hmong vowels and tones. For purposes of illustration we use a minimal number of consonant onsets to show how the system works and the placement of the symbols in orbit around the consonant.

Hmong tones /¹ ² ³ ⁴ ⁵/ are enough like Thai tones so that they can be written in the same way. Thus, the combination of the class of the consonant and the tone mark or lack of it in those five columns follows the Thai system exactly. Tones /⁶ ⁷/ do not have any counterpart in the Thai tone system, so we have improvised.

/⁶/ is a low, breathy tone. At an earlier stage we wrote it as a low tone in the Thai symbolisation and added an unpronounced symbol <๓> to distinguish it from tone /⁵/, which is also written as a low tone by Thai conventions. At that stage /mi⁶/ <mig> was written <มื๓>, the <ม> being required for the low tone, and the <๓> being required to distinguish this low tone /⁶/ from /⁵/, which would be transcribed /mi⁵/ <มิ>.

However, it was found that there was considerable difficulty since the symbolisation of the tone was overly redundant. At the present time users of the parallel system in Laos are happier with a system which simply marks /⁶/ by <๓>, without Thai low tone markings as well.

For tone /⁷/, likewise, after a period of more complex solutions which we felt at the time were closer to Thai conventions, experience showed that a simpler solution was better. /⁷/ is therefore symbolised by <๓> in the same way that /⁶/ is symbolised by <๓>.

¹This system differs in some details from the incomplete proposals in Smalley *et al.* 1963:91-2,96-7. It has been prepared through a long process of consultation between Whitelock and myself, with the reactions of Ying (a Hmong Daw), with some ideas from Somjit Sroisuriya of the Ministry of Education in Chiang Mai, and with the benefit of intensive use of a parallel system in Lao script by Whitelock.

		1	2	3	4	5	6	7
		┌	┐	└	┘	┘	┘	┘ ?
		b	j	v		s	g	m
MCC	/i/	กื	กื	กื	กื	กื	กื	กื
	/ü/	กื ¹	กื	กื	กื	กื	กื	กื
	/u/	อู	อู	อู	อู	อู	อู	อู
	/e/	เก	เก	เก	เก	เก	เก	เก
	HN/ä/ = HD/a/	กา	กา	กา	กา	กา	กา	กา
	/o/	กอ	กอ	กอ	กอ	กอ	กอ	กอ
	HN/ë/ = HD/ä/	เก	เก	เก	เก	เก	เก	เก
	/ö/	ก	ก	ก	ก	ก	ก	ก
	HN/a/ = HD/ia/	เก	เก	เก	เก	เก	เก	เก
	/ua/	กัว	กัว	กัว	กัว	กัว	กัว	กัว
LCC/ HCC	/ai/	ไก	ไก	ไก	ไก	ไก	ไก	ไก
	/aü/	เก	เก	เก	เก	เก	เก	เก
	/au/	เก	เก	เก	เก	เก	เก	เก
	/i/	ก	ก	ก	ก	ก	ก	ก
	/ü/	ก	ก	ก	ก	ก	ก	ก
	/u/	อู	อู	อู	อู	อู	อู	อู
	/e/	เก	เก	เก	เก	เก	เก	เก
	HN/ä/ = HD/a/	กา	กา	กา	กา	กา	กา	กา
	/o/	กอ	กอ	กอ	กอ	กอ	กอ	กอ
	HN/ë/ = HD/ä/	เก	เก	เก	เก	เก	เก	เก
	/ö/	ก	ก	ก	ก	ก	ก	ก
	HN/a/ = HD/ia/	เก	เก	เก	เก	เก	เก	เก

Table 11 - continued

¹Hmong spelling here does not follow Thai conventions exactly. Thai /t+/ is spelled <๕> in open syllables, with the <๕> completely redundant. Other languages represented in this book have usually followed the Thai pattern, as was done in the earlier days of experimentation with Hmong. However, in time the redundant <๕> was dropped for Hmong.

LCC	/ua/	ห้าว	ห้าว	ถ้าว	ห้าว	ถ้าว	ห้าวห	ห้าวค
	/ai/	ไห้	ไห้	ไถ	ไท	ไถ	ไทห	ไटक
	/aü/	เกี้ยว	เกี้ยว	เถียว	เกี้ยว	เถียว	เกี้ยวห	เกี้ยวค
	/au/	โห้ว	โห้ว	โถว	โทว	โถว	โทวห	โทวค
	/i/	มี	มี	หมี	มี	หมี	มีห	มีค
	/ü/	มี	มี	หมี	มี	หมี	มีห	มีค
	/u/	มู	มู	หมู	มู	หมู	มูห	มูก
	/e/	เม	เม	เหม	เม	เหม	เมห	เมค
	HN/ä/ = HD/a/	มา	มา	หมา	มา	หมา	มาห	มาค
	/o/	มอ	มอ	หมอ	มอ	หมอ	มอห	มอค
	HN/ë/ = HD/ä/	เม้ง	เม้ง	เหม้ง	เม้ง	เหม้ง	เม้งห	เม้งค
	/ö/	ม่ง	ม่ง	หม่ง	ม่ง	หม่ง	ม่งห	ม่งค
	HN/a/ = HD/ia/	เมี้ย	เมี้ย	เหมี้ย	เมี้ย	เหมี้ย	เมี้ยห	เมี้ยค
	/ua/	มัว	มัว	หมัว	มัว	หมัว	มัวห	มัวค
	/ai/	ไม	ไม	โหม	ไม	โหม	ไมห	ไมค
	/aü/	เมี้ยว	เมี้ยว	เหมี้ยว	เมี้ยว	เหมี้ยว	เมี้ยวห	เมี้ยวค
	/au/	โม่	โม่	โหม	โม่	โหม	โม่ห	โม่ค

Table 11. Chart of Hmong vowel and tone transcription

MCC, HCC and LCC refer to mid class, high class, and low class consonants in the Thai writing system, respectively.

Nasalised vowels are represented as the nearest Thai vowel sound followed by what would in Thai be final /ŋ/. Other vowels follow the nearest Thai equivalent to their most prevalent allophone. For example, Hmong /i/ is written with the symbol for Thai /ii/ consistently, although there are differences of pronunciation of this Hmong vowel, as described earlier. This allophonic variation in Hmong is not consistent enough to be able to represent the allophonic variety in Thai script, and the nearest Thai symbol to some of the allophones would have been the symbol which is needed for Hmong /ü/.

The complicated Thai consonant class system for writing tones has to be maintained for Hmong in order to write Hmong tones in such a way as to preserve a high transfer value to Thai. Table 11, therefore,

shows the vowel and tone intersections in three groups, built around a mid class consonant (MCC), a combination of low and high class consonants (LCC/HCC), and a low class consonant (LCC) with and without preceding high class <ห> to change its tone class.

In Table 12, where the Thai transcription of the onsets is presented, the consonant symbols are sometimes given in pairs. For mid class consonants there is no corresponding high class form, but for every low class consonant symbol there is. Some lines contain both mid class and low class consonants, distinguished by the fact that the mid class consonants have no high class counterpart, and the low class consonants do.

	p	pl	t	tl(?d)	ts	r	c	tʰ	k	q	ʔ
HCC					ตล						
MCC/ LCC	ป	ปล	ต	ด	ตช	ตร	จ	จจ	ก	กก	อ
	ph	plh	th	tlh(?th)	tsh	rh	ch	tʰh	kh	qh	
HCC	ผ	ผล	ถ	ถด	ถล	ถร	จ	ถจ	ข	หข	
LCC	พ	พล	ท	ทด	ทช	ทร	ช	ทช	ค	ฆ	
	np	npl	nt	((ntl))	nts	nr	nc	ntʰ	nk	nq	
HCC					นล	นร					
MCC/ LCC	มบ	มปล	นด	นด	นช	นร	นจ	นจ	งก	งก	
	nph	nplh	nth		ntsh	nrh	nch	ntʰh	nkh	nqh	
HCC	มผ	มผล	นถ		นถล	นถร	นจ	นถจ	งข	หงข	
MCC/ LCC	มพ	มพล	นท		นทช	นทร	นช	นทช	งค	งฆ	
	m	ml	n	l			ก		ก		
HCC	หม	หมล	हन	हल			हु		ह		
LCC	ม	มล	น	ล			ญ		ง		
	hm	hml	hn	hl			hก				
HCC	หิม	หิมล	ห็น	ห็นล			หญ				
LCC	ฮม	ฮมล	ฮน	ฮล			ฮญ				
	f		s		ซ	x				h	
HCC	ฝ		ส		สร	สย				ห	
LCC	ฟ		ช		ชร	ชย				ฮ	
	v				ข	y					
HCC	หว				หร	หย					
LCC	ว				ร	ย					

Table 12. Transcription of Hmong onsets in Thai script

Needless to say, the class conventions follow Thai usage and have nothing to do with Hmong phonemic structure or phonemic history. They are simply applied to Hmong to bring the greatest transfer value to Thai usage.

As anyone who knows the Thai writing system will see, Table 12 presents some problems, all stemming from the large difference between Hmong and Thai phonemic systems, as described earlier. These problems may be classified in several categories.

1. Some consonants have been written allophonically in Hmong so as to increase the transfer value to Thai. From a phonological standpoint, for example, /np/ could have been written simply <v> (Thai /b/) or <wv> (Thai /n/ + /p/) instead of <wv> (Thai /m/ + /b/). The latter was chosen because it is closer to the pronunciation of the individual segments. Even with the choice we have made, however, there are unresolved problems in transfer, because in Thai these two consonant symbols would always be read with an intervening vowel, which they do not have in Hmong. Allophonic writing applies to all of the prenasalised unaspirated series.

2. Several of the symbols are used in ways different from their Thai values simply because Hmong has so many more contrasts than Thai, whereas Thai has many excess symbols from a phonological standpoint. There are varying degrees of departure from Thai usage. <ɗ> (Thai /d/) represents Hmong Daw /ʔd/, Hmong Njua /tɿ/. The Hmong Daw pronunciation is only slightly different from Thai, and will cause no complications. This departure, therefore, is only a minor one for Hmong Daw, greater for Hmong Njua.

A much greater departure from Thai can be seen in a case like the use of <ɰ> for Hmong /qh/. It is a symbol for /kh/ in Thai, used in very few words. There is no etymological excuse or pattern of transliteration in borrowing to fall back on for this choice. There is some phonetic similarity, but /kh qh/ are phonemically separate in Hmong.

3. Another kind of departure from the Thai system is to be seen in a sequence like <ᵀᵐ> and <ᵐᵐ> for Hmong /hm/. The circle over the first consonant in <ᵀᵐ> indicates a contrast with <ᵐᵐ>. The latter marks the high class /m/ in the usual Thai manner, while the former (with the circle) indicates that the onset is voiceless as well as high class. It thus marks the high class /hm/.

4. In order to make up enough symbols for the large Hmong inventory we filled out with digraphs (double letters), some of which follow the phonetic values of the Hmong reasonably well (like <ᵀᵀ/ᵀᵀ> for /ts/), and others of which are completely arbitrary. These include the doubled

letters <aa> for /tʃ/, <nn> for /q/, etc. In an earlier solution some of these latter were written with Thai symbols for Sanskrit and Pali borrowings, such as <๑ ๑ ๑>, but these proved troublesome because of the impossibility of printing a <๑> /u/ under them since the symbols contained tails which occupied the position for <๑>. There was no transfer value to Thai in the use of these symbols, and it was found better to drop them and adopt the convention of double letters instead.

5. On a sequence of Thai-script symbols we have tried as much as possible to follow the Thai convention of having the first consonant in the sequence govern the consonant class of the sequence. For example, in Thai the high class of the first consonant in ถนน /thanǎn/ 'road' governs the class of the whole sequence. There are some Hmong exceptions to this principle, again with the intention of seeming more like Thai than being blindly consistent. The most notable exception is in the prenasalised consonants, which (with the exceptions to be mentioned in a moment) follow the class of the consonant immediately following the symbol for prenasalisation. Thus Hmong <๑๑ ๑๑> follow the class of <๑>, not of <๑>.

A further problem occurs in the case of sequences <๑๑ ๑๑ ๑๑> representing high and mid class /ts nts/; two of these contain high class consonants in final position in the digraph, and in these cases the high class final consonants of the sequences govern the consonant class.

6. In the Thai script the contrast between zero onset and /ʔ/ onset is washed out, for Thai has no way of showing zero onset.

In making these adaptations from Thai we have tried to cause as little interference in moving between the two languages as possible. Wherever the languages have close phonetic similarities they are written the same way. Where we have adapted a Thai consonant symbol to a use other than that which it has in Thai we have tried to have some association, and the more distant the adjustment, the rarer the consonant symbol we have used whenever possible. In some cases the adaptations are for consonants which are very rare in Hmong also, as can be seen by comparing Table 12 with Table 5. Overall, the transfer value is quite high in spite of the great difference between the phonemic systems. Unquestionably there still remain some very un-Thai-looking syllables. So far we have found no better solution for them.¹

¹Lemoine 1972, which is a generally good survey of the various Hmong orthographies (indigenous and foreign, developed in China and Laos), is rather sharply critical of the Lao-based system parallel to the Thai-based system described here. He is, on the other hand, quite favourably inclined to the western letter system described here. A close reading of his article will show that he operates from some different

(continued overleaf)

Sample text

The following text in Hmong Daw (White Meo) will illustrate the system. The lines give, respectively: phonemic transcription, romanised script, Thai script, literal translation, and free translation.¹

ntaũ ⁷	no ⁴	hai ⁵	mu ⁵	hai ⁵	tso ⁶	ua ⁴	tse ³	ʔõ ⁴
ntawm	no	hais	mus	hais	txog	ua	tsev	xyoo
เนตาวม	นอ	ไห	มุ	ไห	ตซอ	อ่า	เจ	ซรง
here	this	say	onward	say	about	make	house	year
From here on (I) will speak about making a house. The year								
ʔua ⁵	lia ⁶	ʔü ¹	mu ⁵	tso ⁶	khoñ ⁵	ma ⁵	ʔü ¹	nro ⁶
uas	Liag	wb	mus	txog	Khonyas	mas	wb	nrog
อ่า	เลีย	อี	มุ	ตซอ	คองญา	มา	อี	นรอก
which	Leah	we	go	reach	Khanya,		we	with
when Leah and I went to Khanya, we lived with others								
laũ ³	ño ¹	tau ⁴	ʔi ¹	ntu ⁵	thia ²	li ⁴	ro ³	qa ¹
lawv	nyob	tau	ib	ntus	thiaj	li	rov	qab
เหลียว	ญอ	โต	อี	นตุ	เทีย	ลี	รอก	ก้า
them	live	past	a	season	therefore		return	
for a time. Then we returned to drive								
tua ²	laũ ³	npua ⁴	pua ⁶	ti ⁷	qu ¹	tse ⁴	ti ⁷	no ⁴
tuaj	lawv	npua	puag	tim	qub	tse	tim	no
ตัว	เหลียว	มัว	ปัว	ตี	กุก	เจ	ตี	นอ
come	drive	pigs	inten.	over there	old	house	over there	here
the pigs from over at the old village to over here.								

(continued from previous page)

assumptions than those we have stated as lying behind this book. He is also quite misinformed about the usefulness of the system. It is being easily and quickly learned by hundreds of villagers, both those literate in Lao and those who are not. It has established roots quickly there because (in contrast to Hmong in Thailand) the drive to literacy in Hmong is relatively high. This is not to discount the strong opposition from a core of Hmong elite who use the western letter system (Lyfoung 1974). This is natural, and to be respected. They have established a pattern of communication through the western letter system. It is efficient, less cumbersome than the Lao-based system, and distinctively their "own". And I am cited as the authority for the validity of the system (Yv 1972:162)!

Perhaps I should put on record the fact that even when the western letter system was agreed upon I was reluctant not to have a Lao-based system. I did not follow through and prepare one because I had not worked out how to do it, Laos was still a French country, and Bertrais was strongly opposed. Soon after the development of the system the Protestant mission was informed by the government that it could not use that western-letter based system for the Hmong, a ruling which it followed although another major mission did not. The government has endorsed the Lao-based system, and has endorsed the primers for use in the schools.

¹The text was transcribed by Whitelock from a tape recording by Ying of Cawca.

laü³ npua⁴ mu⁵ tso⁶ ma⁵ thia² li⁴ pi¹ ʔua⁴ tʂe³
 lawv npua mus txog mas thiaj li pib ua tsev
 เหลียว มัว หมู โตห้ หม่า เที้ย ลี ปี้ อัว เจจ้
drive pigs go reach , therefore begin make house
(We) drove the pigs then began making the house.

ʔua⁴ tʂe³ ma⁵ ma² ma⁷ ʔua⁴ tau⁴ ʔua⁴ tau⁴
 ua tsev mas maj mam ua tau ua tau
 อัว เจจ้ หม่า ม่า มาค้ อัว โตว อัว โตว
make house , gradually make past. make past.
(We) gradually got the house made. When we got

ma⁵ so³ ʂō¹ sü¹ tʂi⁵ ka³ ku³ ha² ʔua⁴ tsa²
 mas xov xyoob xwb tsis kav kuv haj ua txaj
 หม่า ล้อ ชย้ง ชี้ จจี้ ก่า กู ห่า อัว ตข้า
fence bamboo only nevertheless I still make room
it made although it was only made of bamboo, I made a guest room too

qha⁴ hu³xi⁴ vi⁷ sa³ tia⁵ ʒau⁷ yo⁶ mua²
 qhua huvsɿ vim xav tias zaum yog muaj
 ชัว หุขริ วีค ล่า เตี้ย ไรวค ยอห้ มัว
guest everything because think thinking time if have
because I thought, on the occasions when guests

kü³ti³ tua² ʂua⁵ ma⁵ thia² li⁴ tau⁴ chaü⁴ pü⁴
 kwvtij tuaɿ xyuas mas thiaj li tau chaw pw
 กี้ ตี้ ตัว ลยัว หม่า เที้ย ลี โตว เชียว ปี้
friends come visit , therefore past. place sleep
come to visit there will be a place for them to sleep

ʔua⁴ tau⁴ ʔo¹ lu¹ tsa² ʔi¹ lu¹ lia⁷ ʔü¹ pü⁴
 ua tau ob lub txaj ib lub Liag wb pw
 อัว โตว อือ ลู ตข้า อี้ ลู เลียห้ อี้ ปี้
make past. two clf. rooms one clf. Leah we sleep
I made two bedrooms one where Leah and I sleep

ʔua⁴ ʔi¹ lu¹ tsa² qhua⁴ qho³ ʔua⁵ hai⁵ tia⁵ tsa²
 ua ib lub txaj qhua qhov uas hais tias txaj
 อัว อี้ ลู ตข้า ชัว หขอ อัว ไห้ เตี้ย ตข้า
make one clf. room guest place which say saying room
and one a guest room. When I say "guest room",

qhua⁴ yo⁶ hai⁵ mǎi² mǎi² li⁴ ma⁵ hai⁵ tia⁵ tsa²
 qhua yog hais meej meej li mas hais tias txaj
 ชั่ว ยอห์ ไห่ เม็ง เม็ง ลี หม่า ไห่ เตีย ต๋า
guest is say clearly clearly , say saying room
to put it clearly

qhua⁴ lu¹ tsa² ʔua⁵ yu⁵ tʃe³ tʃi⁵ mua² nǎi⁶ pü⁴
 qhua lub txaj uas yus tsev tsis muaj neeg pw
 ชั่ว ลู ต๋า ฐา หยุ เจจ จั มัว เนงห์ ปี่
guest clf. room which self house neg. have person sleep
a guest room is one where no one in the household sleeps.

ʔua⁵ yo⁶ mua² qhua⁴ tua² ŋo¹ hau³ yu⁵ tʃe³
 uas yog muaj qhua tuaj nyob hauv yus tsev
 ฐา ยอห์ มัว ชั่ว ตัว ญ้อ ไหว หยุ เจจ
which if have guest come live in self house
When visitors come to stay

laü³ tua² cō¹ tʃi⁵ tʃu⁷ nrhia³ le³ pua⁴ chaü⁴
 lawv tuaj coob tsis tsum nrhiav lev pua chaw
 เหลียว ตัว จ้ง จั จจุต เนกรีย เหล ปัว เชียว
they come many neg. must search mat spread place
in large numbers (you) don't have to search for a mat to spread out.

mua² tsa² xǎi⁷ ʔua⁵ pu¹ rau⁴ laü³ pü⁴ sü¹
 muaj txaj seem uas pub rau lawv pw xwb
 มัว ต๋า เซริงค์ ฐา ปู้ ไตรว เหลียว ป้อ ซึ
have room free which give to them sleep only
you have a free room which you give to them to sleep in,

ma⁵ pe¹ hu⁴ ʔua⁴ tsa² qhua⁴ tia⁷xi⁵ yo⁶ hai⁵
 mas peb hu ua txaj qhua tiamsis yog hais
 หม่า เป็ ฐา ฐา ต๋า ชั่ว เตียคัลลี่ ยอห์ ไห่
 , we call room guest But if say
we call it a "guest room". But, to put it

mǎi²mǎi²li⁴ ma⁵ lu¹ tsa² ntaü³ hai⁵ tia⁵ tsa²
 meej meej li mas lub txaj ntawd¹ hais tias txaj
 เม็ง เม็ง ลี หม่า ลู ต๋า เนตาวด์ ไห่ เตีย ต๋า
clearly clearly , clf. room that say saying room
clearly, that room is the "guest room" for visitors to sleep

¹<-d> is used in the Roman script to mark the second allophone of /ʔ/.

qhua⁴ ʔua⁵ qhua⁴ pü⁴ hai⁵ li⁴ ntaü³ ma⁵ chaü⁴
qhua uas qhua pw hais li ntawd¹ mas chaw
ซึ่ง ั่ว ซึ่ง ปี่ ไห่ ลี เนตวัก หม่า เชียว
guest which guest sleep say that , place
in.

xaü⁴ ntaü³ ku² ʔua⁴ tau⁴ hu³xi⁴ thia¹
sau ntawv kuj ua tau huvsɿ thiab
ไซรว เนตั่ว กู้ ั่ว โตว หุขริ เทียบ
write books even make past. everything also
(I) made a place for writing, too.

lu¹ tše³ ntaü⁷ ha² ɲo¹ tši⁵ tšhua⁴ ʒe⁴
lub tsev ntawd¹ haj nyob tsis tshua ze
ลู เจ เนตวัก ห้า ญ้อ จสี ทซั่ว เร
clf. house that still... live neg. very near
The house wasn't near others, a bit away

laü³ te² ɲo¹ ʔde¹ me⁴tši⁵ thia¹ nyo¹ su⁴ ke³
lawv tej nyob deb *mentsis thiab nyob xu kev
เหลียว เต ญ้อ เต เมนตสี เทียบ ญ้อ ชู เก
they others live far little also live off the road
off the road in a

ɲo¹ ntšia⁶ to⁴ mua² ntō⁴ ʒo⁴ xai¹ ha³ ntō⁴
nyob ntsiag to muaɟ ntoo zoo saib hav ntoo
ญ้อ เนสียห์ ตอ มั่ว นตง รง ไซรั หา นตง
live quiet have trees good look at valley trees
quiet place with trees which were good to look at. The trees

npō⁶ lua⁶ ntaü⁷ te² qa¹ va⁶ tši¹ tau⁶ ʒō⁴
npog luag ntawm tej qab vag tsib taug zoo
มบอห์ ลวห์ เนตวัก เต ก้า วาห์ จสี โตวห์ รง
cover others at some garden bottom side of house good
at the downhill side of the house covered (us) from others,

ʒō⁴ xai¹ li⁴
zoo saib li
รง ไซรั ลี
good look at
it was nice to look at.

¹<-d> is used in the Roman script to mark the second allophone of /ʔ/.

PART TWO

CHAPTER FIVE

L I S U

E.R. HOPE¹

Lisu, the subject of this paper, is also known as Lissaw (ꨆꨣꨳ), Khàe-Lissaw (ꨆꨣꨳꨳ), Li-hsaw, Li-shaw, Liso, Lu-tzu, Lesuo, Leisu, Lěshuop'a, Loisu, Yeh-jen, and Yawyin. The tribe's own name for themselves is phonemically written /l'iswu/, in the Thailand dialect. The language is one of the Lolo group of Tibeto-Burman languages, and is related to Lahu, Akha and Nosu (I, Yi).

There are probably something over a half-million speakers of Lisu, with about 200,000 in Burma², some 317,000 in China (LeBar *et al.* 1964), and between 12,000 and 15,000 in Thailand³ in the Chiang Mai, Chiang Rai and Mae Hong Son Provinces.

¹Data for this paper were collected during three periods of field work, totalling some eight years in all. From April 1958 until September 1966 my research was sponsored by the Overseas Missionary Fellowship, of which I was then a member, and from July 1969 until the date of this draft (March 1970) my fieldwork is being sponsored by the Australian National University's Research School of Pacific Studies and has the approval of the Thai National Research Council. The following Lisu men have been my main informants: Alé Lubé, Yasá, Mukwa Bú, Abé Achá, and Mya Dì of Doi Chang, west of Chiang Rai, and Gwaphà Lé and Byà Sùpù of the Mae Salong area, west of Mae Chan.

The first edition of this paper was prepared with the help of William A. Smalley and David Thomas and was mimeographed in 1966. Many important features of Lisu phonology were missed in that edition.

Other descriptions of one or another Lisu dialects are Burling 1967; Fraser 1922; Hope 1971, 1972, 1973a, b; Chinese Academy of Science 1959; Nishida 1967, 1968a, b, 1969; Roop 1970; Ruey Yih-Fu 1948.

²Estimate of missionaries who lived with or visited Lisu in Burma during the 1960s. There are at least 60,000 members of Christian churches there.

³My own estimate based on a well-established figure of 1352 households, and a hypothetical average of 9 persons to a household.

The dialect represented in this paper is the southernmost, and is spoken by the Lisu in Thailand and adjacent areas of the Shan State in Burma. This dialect is not representative of the language as a whole, but is somewhat aberrant due on the one hand to the large number of Yunnan Mandarin words which have been fully assimilated, and on the other to the fact that many of the Noun- and Verb-Phrase markers which are so typical of the other dialects (and of the Lolo languages in general) have either been completely elided or at least contracted in a large number of cases. Nevertheless, it represents the only major Lisu dialect in Thailand, apart from that spoken by a handful of refugees from the north who number no more than ten persons.

It is necessary to compare two possible phonemic interpretations of Lisu phonology, and the influence of each upon the choice of a Thai orthography. The two rival descriptions differ in the treatment of palatal phones and the phonemic status of these, and so the problem will be discussed in the section entitled "Palatalisation". In other respects the descriptions are identical.¹

Initial consonant phonemes (Palatal series omitted)

	Labial	Simple Alveolar	Complex Alveolar	Velar	Glottal
Stops and Affricates	p	t	ʈ [ts]	k	ʔ
	ph	th	ʈh [tsh]	kh	
	b	d	ɟ [dz]	g	
Fricatives	f	s		x	h
	v	z		ɣ	
Nasals	m	n		ŋ	
Lateral		l			

In the following table of phonemes the following generalised rules apply:

All stops are fortis in stressed syllables, lenis elsewhere.

All initials are articulated with lip protrusion when followed by the labialisation phoneme /-w-/.

All initials have fortis articulation when followed by a laryngealised vowel.

All bilabial initials are accompanied by a simultaneous assuming by the tongue of an approximate palatal position when these are followed

¹For more detailed discussion of Lisu phonology, see Hope 1971, 1973a.

by the palatalisation phoneme /-y-/.

The following abbreviations will be used:

vl.	voiceless	vel.	velar
vd.	voiced	glot.	glottal
asp.	aspirated	lab-dent.	labio-dental
unasp.	unaspirated	nas.	nasal
dent.	dental	fric.	fricative
bilab.	bilabial	aff.	affricate
alv.	alveolar	lat.	lateral

/p/ [p] vl. unasp. bilab. stop similar to *p* as in *peak*, or *ɸ* as in *ph*. /pu/ [po₃] <ꠈ> 'gun'.

/ph/ [ph] vl. asp. bilab. stop, similar to *p* as in *peak*, or *w* as in *ph*. /phu/ [pho₃] <ꠈ> 'chew cud'.

/b/ [b] vd. bilab. stop, similar to *b* as in *beak*, or *ɸ* as in *ph*. /bu/ [bo₃] <ꠈ> 'armspan'.

/t/ [t] vl. unasp. tip-alv. stop, similar to *t* as in *stuck*, or *ṭ* as in *ṭa*. /tú/ [to₅] <ꠈ> 'to bud'.

/th/ [th] vl. asp. tip-alv. stop, similar to *t* as in *tuck*, or *n* as in *th*. /thu/ [tho₃] <ꠈ> 'a bud'.

/d/ [d] vd. tip-alv. stop, similar to *d* as in *duck*, or *ṭ* as in *ṭeik*. /du/ [do₃] <ꠈ> 'to drink'.

/tʃ/ [tʃ] vl. unasp. tip-alv. aff., similar to *zz* as in *pizza* or *ṭṭ* as in *ṭṭṭṭṭṭ*. /tʃa/ [tʃa₃] <ꠈ> 'a vine'.

/tʃh/ [tʃh] vl. asp. tip-alv. aff. similar to *ts* as in *tsetse fly*. /tʃha/ [tʃha₃] <ꠈ> 'hot'.

/j/ [dz] vd. tip-alv. aff. similar to *ds* as in *odds*. /ja/ [dza₃] <ꠈ> 'rice'.

/k/ [k] vl. unasp. dorso-vel. stop, similar to *k* as in *skate* or *n* as in *ṭṭ*. /kúku/ [ku₅ku₃] <ꠈ> 'elder brother'.

/kh/ [kh] vl. asp. dorso vel. stop similar to *k* as in *Kate*, or *ṭ* as in *ṭṭ*. /khu/ [khu₃] <ꠈ> 'to happen'.

/g/ [g] vd. dorso-vel. stop, similar to *g* as in *gate*. /gu/ [gu₃] <ꠈ> 'to drag'.

/ʔ/ [ʔ] vl. glot. stop, similar to *ʔ* as in *ʔa*. /ʔu/ [ʔu₃] <ꠈ> 'swollen'. This phoneme is actually questionable in status, as it is confined to syllables with primary stress and no other initial. Primary stress is further predictable from the grammar and occurs only with main

verbs (of both matrix and embedded sentences).

/f/ [f] vl. lab.-dent. fric. similar to *f* as in *fine*, or ฟ as in ฟ้ำ.
/fwu/ [fvũ₃] <ฟว> 'snake'.

/v/ [v] vd. lab.-dent. fric. similar to *v* as in *vine*, when occurring before front vowels or /-w-/. /ve/ [ve₃] <เว> 'flower'; /vwu/ [vvũ₃] <ว> 'buy'.

[y] rounded back mid-high vowel glide similar to *w* as in *wine*, or ว as in ว่าง, when occurring before back vowels. /vù/ [yũ₁] <หว> 'vegetable', /và/ [yũ₁] <หว> 'manpower'.

/s/ [s] vl. tip-alv. grooved fric. similar to *s* as in *Sue*, or ส as in สี่. /sà/ [sa₁] <ส> 'stake a claim'.

/z/ [z] vd. tip-alv. grooved fric. similar to *z* as in *zoo*. /zà/ [za₁] <ซ> 'son'.

/x/ [x] vl. dorso-vel. fric. /xá/ [xa₃-s] <ข> 'torn'.

/g/ [g] vd. dorso-vel. fric. /gá/ [ga₃-s] <ก> 'separate'.

/h/ [h] vl. breathy vocoid similar to *h* as in *he* or ห as in หีบ, when occurring before /e ə we wə/. /hè/ [hE₁] <เห> 'yet'; /há/ [há₃-s ts₅] <เหต> 'wart'.

[ĩ] vl. nasalised breathy vocoid similar to ห as in ห้าง, when occurring before /i u wu y/. It is also common before /a ə/ but there are occasions when there is free fluctuation with the non-nasalised form before these two vowels. /hi/ [hĩ₃] <ห> 'house'.

/m/ [m] vd. bilab. nasal continuant similar to *m* as in *me*, or ม as in มี่. /mi/ [mi₃] <ม> 'tasty'.

/n/ [n] vd. tip-alv. nasal continuant, similar to *n* as in *no*, or น as in น้า. /nè/ [nE₁] <เน> 'spirit'.

/ŋ/ [ŋ] vd. dorso-vel. nasal continuant, similar to *ng* as in *sing* or ง as in ง่า. /ŋama/ [ŋa₃ ma₃] <งา> 'banana'.

/l/ [l] vd. tip-alv. lat. continuant, similar to *l* as in *laugh* or ล as in ลิง. /la/ [la₃] <ล> 'come'.

Of the foregoing initials, /m n ŋ/ occur as syllabic consonants as well. /nyũ₁phũ₁/ [ña₃-4 m₁ phũ₁] <นย> 'hornbill'; /bàhtwu/ [ba₁ ŋ₁ tvũ₃] <บ> 'chin'; /àmèhkhè/ [a₁ mE₃ ŋ₁ khũ₁] <อ> 'last evening'.

In rapid speech there is elision of the vocoids in unstressed syllables having fricative or continuant initials. Where the syllable consists of a syllabic nasal, this may lose its syllabicity in rapid speech and be articulated as a nasal final to the previous syllable.

Final consonant phonemes

Nasals occur as syllable finals in a small class of words, most of which are onomatopoeia and adverbs. /kwantáɬá/ [kɰan₃ ta₅ la₅] <กวางต๋าล้า> 'sound of a rice pounder'; /kuŋ/ [kuŋ₃] <กุง> 'a type of owl spirit'. These nasal finals fluctuate freely with nasalisation of the vocoids. Thus /kuŋ/ [kuŋ₃ ~ kũ].

Vowel phonemes

	Front	Central	Back
High	i	ɨ	u
Mid	e	ə	ɔ
Low	æ		a

All vowels tend to go higher in vowel quality in unrestricted high-tone syllables, and to go lower in low-tone and laryngealised high-tone syllables.¹

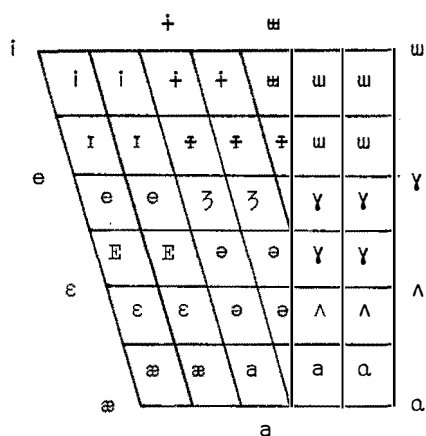
All vowels are nasalised in syllables with initial /m n ŋ ʔ/.

The phonemes /i u wu/ are nasalised in syllables with initial /h/.

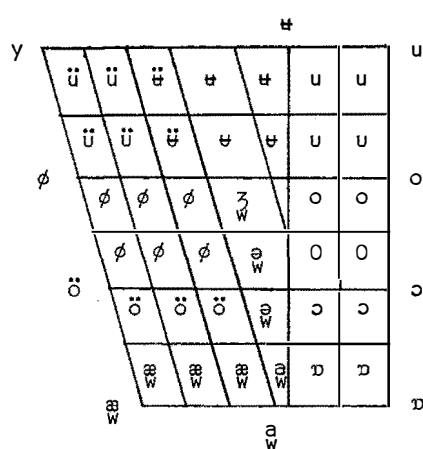
Front vowels are retracted slightly in laryngealised syllables.

/i/ [i] Very high, very front unrounded vocoid, sometimes so high and front that there is friction, similar to (but higher than) *ee* as in

¹The phonetic notation of vowels is based on the following modifications of the Daniel Jones vocoids chart (symbols around the frames represent cardinal vowels):



Unrounded



Rounded

The symbol > after a vocoid symbol indicates that the vocoid is articulated in the posterior section of the area represented by the symbol on the chart.

seek (but unglided), or 𐄌 as in 𐄌. Occurs after /p ph b m/ and in free fluctuation with [ɪ] after /t th d n/ in stressed syllables. /bi/ [bi₃] <𐄌> 'beautiful'.

[ɪ] or [e] Mid-high to high-mid very front unrounded vocoid similar to *i* as in *ill*. Occurs after /t th d n l h/ and the palatalised forms of these. /ti/ [te₃] <𐄌> 'equal'; /di/ [di₃] <𐄌> 'to grow (of tumours and tubers)'.

/e/ [E] or [ɛ] Mid to low-mid front unrounded vocoid, similar to *e* as in *egg*, or 𐄌 as in 𐄌. /bebe/ [bE₃ bE₃] <𐄌> 'pendulous'.

/æ/ [a] Low front unrounded vocoid, similar to *a* as in *cat* or 𐄌 as in 𐄌 (but lower). /bæ vù/ [bæ₃ vù₁] <𐄌> 'a type of tree'.

/ɨ/ [ɨ] Very high front-central unrounded vocoid, so high it is almost a tip-alveolar fricative. Occurs after /s z ʃ ʒ h ʒ/. /sɨ/ [sɨ₃] <𐄌> 'poke into'.

[ɨ'] Very high central unrounded vocoid, so high it is almost a tip-alveo-palatal fricative. Occurs after palatalised forms of /s z ʃ ʒ h ʒ/ (see examples in section on palatalisation).

[ɯ] High back-central unrounded vocoid, similar to 𐄌 as in 𐄌. Occurs after labialisation phoneme /-w-/. /mwɨ/ [mvɨ₄] <𐄌> 'fur'.

/ə/ [ɤ] Mid-high back unrounded vocoid. Occurs with velars. /khə/ [khy₃] <𐄌> 'split (firewood)'.

[ə'] Mid-high back-central unrounded vocoid, similar to 𐄌 as in 𐄌 (but more "back"). /mə/ [mɛ'₃] <𐄌> 'cloth'.

/u/ [u] ~ [o] Mid-high to mid back rounded vocoid, similar to *oo* as in *cook*, or 𐄌 as in 𐄌. /bu/ [bo₃] <𐄌> 'write'. Height of tongue fluctuates freely.

/ɔ/ [ɔ] Mid-low back rounded vocoid, similar to *o* as in *odd*, or 𐄌 as in 𐄌. /pɔ/ [pɔ₃] <𐄌> 'elf. parcel'.

/a/ [a'] Central-back low unrounded vocoid similar to *a* as in *father*, or 𐄌 as in 𐄌 (but more "back"). /ba/ [ba'₃] <𐄌> 'clear (weather)'.

Vowel glides

Phonetically there are vocoid glides in Lisu, but apart from those connected with palatalisation and labialisation, these glides can be ignored for the following reasons:

(i) A generalised rule applies in which contiguous vowels are contracted into one syllable when the syllables involved are in the same

stress group. Stress groups in turn conform to grammatical constraints and are thus predictable.

(ii) In every case, although two vowels may be contracted into one syllable, the individual vowels are the phonological representation of separate morphemes, or part of those morphemes. Morpheme boundaries are always crossed in such contractions.

(iii) The articulation of such "glides" fluctuates considerably. The sequence of any two vowels may be pronounced with the first glided and the second as the syllable nucleus, but the same sequence in the same morphemes may on other occasions be uttered with the first vowel as nucleus and the second as glide. On other occasions, particularly in careful speech, the sequence may be articulated as two separate syllables. Thus /mia/ <ṁṁ> 'It is tasty' may be pronounced as [miṁ₃] [mṁa₃] or [mṁ₃ a₃] and so forth. Thus these glide-like occurrences are in fact not true phonemic glides, even though, phonetically, in rapid speech, almost every vowel occurs as both an on- and an off-glide with almost every other vowel.

Consonant and vowel modification

(i) Nasalised vowels

Some nasalisation is predictable, and is treated as non-phonemic. Most contrastive nasalisation can be ascribed to the allophonic forms of final nasal consonants, since these words have alternative pronunciations in which the nasal final is given its full consonantal value. The exceptions which do not have such alternatives present a problem since there is no supporting evidence for the position that these forms should be treated as having a nasal final. Nevertheless, rather than positing a separate phoneme of nasalisation I have arbitrarily assigned the nasalisation of these exceptional forms to final /n/.

(ii) Laryngealised vowels

All vowels occur in both unrestricted and laryngealised forms, which contrast.

/bi/ [bi₃] <ṁṁ> 'beautiful'; /bṁ/ [bṁ₄] <ṁṁ> 'full'.

/gwu/ [gṁu₃] <ṁṁ> 'use up'; /gwu/ [gṁu₄] <ṁṁ> 'point'.

/dè/ [dE₁] <ṁṁ> 'beg'; /dṁ/ [dṁ₂₋₁] <ṁṁ> 'ground up fine'.

/thà/ [tha₁] <ṁṁ> 'close friends with'; /thṁ/ [tha₂₋₁] <ṁṁ> 'to shield'.

/tí/ [ti₅] <ṁṁ> 'to spit'; /tṁ/ [te₃₋₅] <ṁṁ> 'to soak'.

/mé/ [mE₅] <ṁṁ> 'suffix for girl's name'; /mṁ/ [mE₃₋₅] <ṁṁ> 'to scoop into a pile'.

The feature of laryngealisation is treated as a separate phoneme /₊/, since it occurs with all vowels. An alternative analysis would treat this as a non-phonemic feature of three additional tones, as the feature affects the actual pitch of the syllable. I have accepted the phoneme /₊/ (even though this complicates the analysis of syllable structure) mainly because economy is achieved in the number of phonemes. The /₊/ phoneme is something of a cover-symbol, affecting the economy mentioned, but having the following somewhat diverse phonetic manifestations:

- (a) All front vowels are slightly retracted (backed) in syllables with /₊/. /b₊/ [b_i⁺₄] <ḃ> 'full'.
- (b) In low tone syllables with /₊/ the vowel is laryngealised (glottalised), and the pitch changes from a low [1] to a low fall [2-1]. When the syllable occurs finally in a stress group, the syllable ends in a glottal stop. /th₊/ [th₂₂₋₁] <ṭ> 'to shield'.
- (c) In mid-tone syllables with /₊/ the vowel occurs very tense, but not glottalised. There is also a very slight heightening of pitch from [3] to nearly [4]. When the syllable occurs finally in a stress group, the syllable ends in a glottal stop. /gw₊/ [gv₄₄] <ḡ> 'to point'.
- (d) In high-tone syllables with /₊/ the vowel is lowered, and the high tone [5] becomes a mid-rise [3-5]. /t₊/ [te₃₋₅] <ṭ̃> 'to soak'.

(iii) Labialisation

This feature of Lisu phonology is very generalised, occurring with every initial consonant phoneme except /g/, and with every vowel except /ə/. The labialisation phoneme /w/ has the following somewhat diverse allophonic variations:

[u] Mid-high back rounded vowel glide, with only light voicing after aspirates. Occurs after all fricatives and affricates, velar stops and /ŋ/, when the vowel following /w/ is any vowel other than /+/ or /u/. /fwé/ [f_uE₅] <ḡḡ> 'elf. for portions'; /swá/ [s_ua₅] <ḡḡ> 'poor'; /zwa/ [z_ua₃] <ḡḡ> 'weak'; /ɬwa/ [ɬ_ua₃] <ḡḡ> 'to claw'; /ɬhwá/ [ɬ_ua₅] <ḡḡ> 'visit'; /jwa/ [d_ua₃] <ḡḡ> 'penetrate'; /kwá/ [k_ua₅] <ḡḡ> 'to hang up (of strips)'; /gwa/ [g_ua₃] <ḡḡ> 'there'; /xwa/ [x_ua₃] <ḡḡ> 'seek'; /hwá hwá/ [h_ua₅ h_ua₅] <ḡḡ> 'sound of weeping'.

[v] Voiced labio-dental fricative "long component" of a syllable. It occurs after all unaspirated initials when /u/ follows, and after /p b f v t d l/ when /+/ follows. The articulation of this feature of Lisu phonology involves the following:

- (a) A labio-dental fricative release of bilabial consonants. This causes the bilabial stops to become bilabial affricates, and [m] to

(b) The adopting of a labio-dental position concurrent with the formation of all unaspirated non-bilabial initials.

[f] This is the counterpart of [v] above, but occurs after all aspirated stops when /u/ follows, and after /ph/ and /th/ when /+/ follows. It results in all aspirated stops becoming aspirated affricates. Thus [ph th ~~ch~~ kh] become [p̣ʰh ṭʰh ṭʰsʰh ḳʰh] respectively. The vowel modification is as for (c) above. /thwu/ [ṭʰhʷu₃] <n₃> 'make a fence'; /thw+/ [ṭʰhʷu₃] <n₃a> 'a finger span'.

From the above it can be seen that the duration of the "long component" /w/ varies from the short glide-like occurrence which we can symbolise as CwV, through the longer occurrence CV^w in which only the vowel is affected, to the long occurrence which affects the whole syllable and which we can symbolise as (CV)^w.

With CV^w the consonant is minimally affected (lip-protrusion or labio-dental modification) but the vowel is rounded or articulated with labio-dental friction /kwú/ [kvú₅] <ñĩ> 'to hire'.

Labialised consonants and Labialised vowels - see List
overleaf.

¹This word was represented as /mwɪ/ earlier in this chapter. Both forms occur.

Labialised consonants					Labialised vowels		
pw	tw	ɸw	kw	ʔw	wi	wɨ	wu
phw	thw	ɸhw	khw		we		-
bw	dw	ɸw	gw		wæ		wa
fw	sw		xw	hw			
vw	zw		-				
mw	nw		ɲw				
	lw						

For examples see text, above.

Labialisation also occurs finally. /syaw/ [sɤwɔ] <ស្ប៉ា> 'saltpetre'.

(iv) Palatalisation

In either of the two analyses we shall presently discuss, all bilabials and /h/ occur palatalised, and this palatalisation can be abstracted as a separate phoneme /y/, for the most economical solution. Thus /pyɤ/ [pyɤ₄] <ប្បា> 'to hide'; /phyɤ/ [phyɤ₃₋₅] <ផ្សា> 'destroy'; /byà/ [bya₁] <ប្បិ> 'honey'; /myà/ [mya₁] <អ្នក> 'many'; /hyà/ [hya₁] <អ្នក> 'serow goat'.

Solution I. This posits a series of palatalised alveolar consonants, after the pattern of /py phy by my/ mentioned above. This solution is open to two variations. The first posits the following chart of palatalised phonemes:

py	ty
phy	thy
by	dy
	sy
	zy
my	ny
	ly
	hy

In the second variation of Solution I the arrangement is:

py	ɸy
phy	ɸhy
by	ɸy
	sy
	zy
my	ny
	ly
	hy

There is a problem of where to assign the palatalised alveolar stop phones, and this problem is incapable of non-arbitrary solution. A look at the allophonics of the situation will show why. If the phones are

assigned to the stop phonemes, we have:

/ty/ [cç] ~ [c] Voiceless unaspirated posterior-blade palatal affricate with slit fricative release, fluctuating freely with voiceless unaspirated posterior-blade palatal stop. This allophone occurs with all vowels except /i/, and with /we/. /tyá/ [cças] ~ [cas] <ḡḡ> 'cook'; /tywé/ [cçü₅] ~ [cü₅] <ḡḡḡ> 'to meet (of rivers)'.

[tʃ] Voiceless unaspirated tip alveo-palatal affricate with grooved fricative release, similar to *ch* as in *munch*, or *q* as in *qam*. Occurs with /i + w/ *wu wa/*. It fluctuates freely with [cç] and [c] before /i u/. /ty+ / [tʃ+₅] <ḡḡḡ> 'close (a door)'; /tywú/ [tʃvu₅] <ḡḡḡ> 'to hollow out'; /tyí/ [tʃi₅] ~ [cçi₅] ~ [ci₅] <ḡḡḡ> 'transplant'.

/thy/ [cçh] ~ [ch] Aspirated posterior-blade palatal affricate with slit fricative release, fluctuating freely with aspirated posterior-blade palatal stop. Occurs with /e æ a we/. /thywe/ [cçhü₃] ~ [chü₃] <ḡḡḡ> 'stretch out (limb)'.

[tʃh] Aspirated tip-alveo-palatal affricate with grooved affricate release. Similar to *ch* as in *cheek*, or *ʃ* as in *ʃa*. Occurs with /i + u wu wa/ and is in free fluctuation with [cçh] and [ch] before /e æ a/. /thyè/ [cçhE₁] ~ [chE₁] ~ [tʃhE₁] <ḡḡḡ> 'invite'; /thy+ / [tʃh+₃] <ḡḡḡ> 'barking deer'; /thywu/ [tʃhvu₃] <ḡḡḡ> 'pinch'.

/dy/ [j] ~ [j] Voiced posterior-blade palatal affricate with slit fricative release, fluctuating freely with voiced posterior-blade palatal stop. Occurs with /i æ a we/. /dyá/ [jja₅] ~ [ja₅] <ḡḡḡ> 'a drop (liquid)'; /dywe/ [jyø₃] ~ [jø₃] <ḡḡḡ> 'to sell on credit'.

[dʒ] Voiced tip alveo-palatal affricate with grooved fricative release. Similar to *j* as in *judge*. Occurs with /e + u wu wa/ and fluctuates freely with [j] and [j] with following /i we/. /dy+ / [dʒ+₃] <ḡḡḡ> 'believe'; /dywu/ [dʒvu₃] <ḡḡḡ> 'to parody'; /dye/ [dʒE₃] <ḡḡḡ> 'go'; /dywé/ [jyø₅] ~ [jø₅] ~ [dʒø₅] <ḡḡḡ> 'yonder'.

From the above the problem becomes apparent. In the analysis of non-palatalised consonants it was necessary to set up two contrasting alveolar series - stops vs. affricates. Now in the above treatment of palatalisation we have affricate allophones of stop phonemes. Conversely if the palatalised phones are ascribed to the affricate phonemes, the problem remains, in that there are then stop allophones of affricate phonemes. There are only arbitrary and ad hoc ways of deciding which interpretation to make. If ascribed to the affricate series, the sequences result /ɕy ɕhy jy/, and the allophonic distribution is as for /ty thy dy/ respectively, as above.

The remaining palatalised consonants are:

/sy/ [ʃ] Voiceless tip alveo-palatal grooved fricative, similar to *sh* as in *sheep*. Fluctuates freely with voiceless blade-palatal slit fricative [ç] with following /ə a/. /sy+/ [ʃ+ʰ] <๗๗> 'gold'; /syæda/ [ʃæ₃ da₃] ~ [çæ₃ da₃] <๗๗๓> 'joss sticks'.

/zy/ [j] Voiced blade-palatal slit fricative, similar to *y* as in *you*, or *υ* as in *υ* but with friction. Occurs with following /we/, and fluctuates freely with vowel glide initial [ɪ] with all non-labialised vowels. /zywè/ [jɸ₁] <๗๗> 'use'; /zyɸ/ [jɸ₄] ~ [ɪɸ₄] <๗๗> 'do'.

/ny/ [ɲ] Blade palatal nasal continuant similar to *ny* as in *canyon*. /nyɸ/ [ɲa₃-s] <๗๗> 'bird'.

/ly/ [l̥] Blade palatal lateral continuant. /lyɸ/ [l̥a₄] <๗๗> 'cool down (in shade)'.

The /y/ phoneme raises the height of vowels, including labialised vowels. /phywè/ [phyɸ₂-₁] <๗๗> 'succeed in'.

The sequence /y+/ is articulated almost as high as the voiced blade palatal grooved fricative [ʒ]. /sy+/ [ʃ+ʰ] almost [ʒʰ] <๗๗> 'die'.

Thus /y/ is a long-component too, affecting syllables in ways which can be represented as CVV and (CV)V. With CVV the consonant is affected but the vowel only minimally (heightening). /syf/ [ʃi₅] <๗๗> 'shocked'. With (CV)V both consonant and vowel are affected. /sy+/ [ʃ+ʰ] ~ [ʒʰ] <๗๗> 'die'.

The advantages of this whole solution are:

a) The chart pattern of consonant + /y/ is carried on through the alveolars as well as through the bilabials.

b) By setting up one phoneme /y/ instead of a new palatal consonant series a marked economy is achieved. In all there is a total of 24 initial consonants plus 2 semi-vowels, as against 31 initials plus 2 semi-vowels in Solution II.

c) The following generalised distribution of /y/ + vowel results:

yi	y+	yu
ye		yɔ
yæ		ya

The main disadvantage of this solution is the theoretical unacceptability of the ad hoc treatment of the stop/affricate problem.

Solution II. In this solution a full palatal series of consonant phonemes is suggested and the full chart is given as:

p	t	ɕ	c	k	ʔ
ph	th	ɕh	ch	kh	
b	d	ɟ	ɟ	g	
f	s		ʃ	x	h
v	z		y	ɣ	
m	n		ɱ	ŋ	
	l		ɭ		

To this should probably be added a series

py	
phy	
by	hy
my	

This solution avoids the theoretical problem of Solution I, as a regular distinction is maintained between alveolar stops, alveolar affricates and palatals. In addition, the description of syllable structure is simplified. The allophonic description of the palatal series is the same as for Solution I, the palatal phonemes being written as unit phonemes instead of phoneme sequences of consonant-plus-/y/.

In either solution /y/ also occurs finally. /pɔ̃y/ [pɔ̃ɪ] <ɔ̃ɪ> 'festival'.

Tones

I suggest an analysis of Lisu which has three tones.

/ˈ/ [₅] High level pitch. Occurs in non-laryngealised syllables. /syɿ/ [ʃɿ˥₅] <ɿᵀ> 'twist'.

[₃-₅] Mid pitch rising to high. Occurs in laryngealised syllables. /syɿ/ [ʃɿ˥₃-₅] <ɿᵀ> 'sweep'.

/unmarked/ [₃] Mid level pitch. Occurs in non-laryngealised syllables. /syɿ/ [ʃɿ˥₃] <ɿᵀ> 'die'.

[₄] High-mid level pitch. Occurs in laryngealised syllables, particularly before the verb-marker morpheme /ḡ/. In other laryngealised syllables there is free fluctuation between [₄] and [₃]. /syɿ/ [ʃɿ˥₄] ~ [ʃɿ˥₃] <ɿᵀ> 'long'.

/˘/ [₁] Low level pitch. Occurs in non-laryngealised syllables. /syɿ/ [ʃɿ˘₁] <ɿᵀ> 'blood'.

[₂-₁] Mid-low pitch falling to low. Occurs in laryngealised syllables. /syɿ/ [ʃɿ˥₂-₁] <ɿᵀ> 'new'.

The following chart compares the Lisu tones, as perceived by myself, with the chart of Standard Thai tones, taken from Abramson (1962). Both charts are for tones on syllables in final position.

		LISU	THAI
High	5		
	4		
Mid	3		
	2		
Low	1		

In Lisu other rising and falling tones occur, usually from the contraction of two syllables into one, according to the processes mentioned previously. In such cases the tones of both syllables are kept, and the phonetic result is a rise or fall in pitch. Thus it is better to treat this phenomenon as a tone cluster on the one syllable rather than as a falling tone. In such cases the form can be interpreted as having two vowels, which is usually the full form of the utterance anyway. Two morphemes are usually involved, the second one often only represented by the tone. Thus forms like [ʃi₃-₁] and [næ₅-₃] are best written /syi₃/ and /næ₅/. This treatment is more a morphophonemic one than a phonemic one, and also involves some conjecture, as the full double-syllable form does not always occur. If it is not accepted, then at least three more tonemes must be suggested, namely, a high to low fall, a mid to low fall and a low to mid rise, to take care of such forms as [pha₃ syi₃-₂] 'as soon as he had twisted it'; [pha₃ syi₃-₁] 'as soon as he had died'; [syi₃-₄] 'it is new'. The solution that I have suggested would treat these as /pha syi₃/ <พາຍီ>, /pha syi₃/ <พาຍี>, and /syi₃/ <ยี่> respectively.

Intonation and stress

The most important intonational differences in Lisu are those concerning positive statements and positive questions. Thus [dʒEa₃-₄] <ເຈ> 'he is going', [dʒEa₃-₁] <ເຈ?> 'is he going?'.

The simplest solution to the problem is to treat the positive statement final as /ə/ and the question final as /ə/.

Other intonational features are:

(1) Subordinate clauses and noun phrases have falling intonation when followed by a pause. This often involves the markers /nya/ and /xə/. This intonation can conveniently be marked with a comma.

(ii) For emphasis there is marked heightening of pitch on either a particular morpheme, or a longer sequence within which relative tone distinctions are maintained. Thus /akhǎ/ <อาเค้อ> 'very' with normal pitch of [3 5] may become [5 7]; or /mà dyey/ <หมาเฒ-จื้อ> 'I'm not going' with normal pitch of [1 3-4] may become [3 5-6]. If necessary these features may be marked by underlining.

In polysyllabic words the final syllable is stressed. /ásyǎ/ <อาลือ> 'what'; /èswithé/ <เอ่ชเว้> 'rainy season'.

All other stress is determined by grammatical constraints. There are basically four degrees of stress, with head words in a phrase taking primary stress, markers (particles) being unstressed and the rest in between. In addition the main verb phrase carries heavier stress than noun phrases or subordinate verb phrases. Thus stress is predictable.

Syllable structure

Tone and stress occur with every syllable. The following are the possible combinations of consonants, vowels and modificational features:

C	/m̃/	หม	'not'
V	/à/	ฯ	'question final'
CV	/la/	ลา	'come'
CVy	/túy/	ดูย	'to guarantee'
CVw	/kàw/	กาว	'basis'
CVn	/zón/	เจ้น	'jade'
CyV (Sol.I)	/tyá/	จ๋า	'cook'
CyVw "	/syaw/	ชยาว	'saltpetre'
CyVn "	/tyin/	สิน	'adverb marker'
CywV "	/dywu/	ฉว	'parody'
CywVy "	/thywà/	ฉว้าย	'to punch'
CwV	/kwá/	กวี	'to hang up (strips)'
CwVy	/fwéy/ ¹	เฟว้ย	'portion'
CwVn	/kwan/ /kwantá/	กวาน ต้า	'sound of rice pounder'

In addition, any of the above, except those which end in /n/ or have the form C, may occur with /+/.

Word structure

The majority of morphemes are monosyllables, but a very significant number of bisyllabic morphemes also occur. Most verbs and markers are

¹This word was represented as /fwé/ earlier in this chapter. Both forms occur.

monosyllabic, but most nouns are bisyllabic. Compound words may contain up to eight syllables, /ánà-làthywə-byà-bèlè-ma/ (*dog-tongue-bee-woolly-thing*) <ฉำหน่าหล่าเซวบย่ำเบ่เหล่มา> 'a woolly-dog-tongue-bee'. Apart from those which apply to all Lisu syllables, there are no strict limitations on the structure of the initial syllable of bi-syllabic morphemes. However, only /a e i/ occur as initial vowels in polysyllabic morphemes.

Orthography

In the lists below * marks a symbol which has a different value from what it does in Thai. The words (mid) (high) (low) refer to the consonant classes of Thai.

Thai symbol	Thai value	Lisu value
ก (mid)	k	k
ข (high)	kh	kh
ค (low)	kh	kh
ฅ (low)	kh	x*
ง (low)	ŋ	ŋ
จ (mid)	c	ty/c
ฉ (high)	ch	thy/ch
ช (low)	ch	thy/ch
ซ (low)	s	s
ฌ (low)	ch	dy/j*
ญ (low)	y	z*
ฎ (mid)	d	g*
ด (mid)	d	d
ตล (high)	-	ʃ [dz]
ตช (low)	-	ʃ [dz]
ต (mid)	t	t
ตล (high)	-	ʃ [ts]
ตช (low)	-	ʃ [ts]
ถ (high)	th	th
ท (low)	th	th
ทล (high)	-	ʃh [tsh]
ทช (low)	-	ʃh/tsh
น (low)	n	n
บ (mid)	b	b
ป (mid)	p	p
ผ (high)	ph	ph
ฝ (high)	f	f
พ (low)	ph	ph

		mid class	low / high classes	
Unrestricted vowels:	/ ' /	ดํ	กํ	-
	/ /	ด	ก	-
	/ ` /	ดํ	หมํ	ถํ
Laryngealised vowels:	/ ' + /	ดํ	หม	ถ
	/ + /	ดํ	ม	-
	/ ` + /	ด	หม	ถ

Comments on Thai orthography

As can be seen in the list of consonants marked by * there are five Thai consonant symbols which have significantly different phonetic value in Lisu from what they do in Thai.

ข /kh/ in Thai becomes /x/ in Lisu.

ญ /y/ in Thai becomes /z/ in Lisu.

ฎ /d/ in Thai becomes /g/ in Lisu.

ฌ /ch/ in Thai becomes /dy/ or /j/ in Lisu.

ฤ /r+ / in Thai becomes /ɣ/ in Lisu.

The symbol ว /w/ in Thai represents /v/ (one of the allophones of which is similar to Thai /w/) and the labialisation phoneme /w/ in Lisu, since these Lisu phonemes do not involve contrasts.

The Lisu affricates /tʃ tʃh j/ will be represented by <ตล/ตข นล/นข ตล/ตข>. These clusters do not occur in Thai, but they reflect fairly closely the phonetic value of the Lisu phonemes, and should not present too much difficulty. The tone of the syllable is governed by the *second* consonant in the cluster instead of the *first* one. The latter is what might be expected by analogy with Thai clusters such as ตร /tr/. In the choice of symbols for /x g ɣ z/ I chose <ข ฎ ฤ ญ> because these are rare consonants in Thai, and <ญ> because Lisu often pronounce Thai /y/ as [z]. Wherever Thai symbols have been taken over and the phonetic value changed, these symbols still belong to the same consonant class as they did in Thai. Where high and low class symbols exist for the same Thai phoneme, both have been used in writing the corresponding Lisu phoneme. This enables Lisu to be written using the regular Thai tone system.

Lisu consonant chart in Thai orthography is as follows:

ป	ต	ตล/ตข	จ	ก	อ
ผ/พ	ถ/ท	ทล/ทข	ฉ/ช	ข/ค	
บ	ด	ดล/ดข	ฌ	ญ	
ฝ/ฟ	ล/ลข			ฦ	ห/ฮ
ว	ญ		ย	ฤ	
ม	น			ง	
	ล				

Palatalisation and labialisation is the area where the correspondence between Lisu and Thai phonemes is most lacking. By the very nature of Lisu phonology writing the language with Thai symbols results in sequences which do not occur in Thai.

Palatalisation is usually indicated by <ย>. Sequences such as the following result and are unlike Thai: <ลย> /syá/ 'fix', <หมย> /myà/ 'many'.

The representation of palatalisation is in part from Solution I and in part from Solution II. /py phy by my sy ny ly hy/ are written with consonant plus <ย>. The palatals /ty thy dy zy/ (or /c ch j y/) are represented as the unit symbols <จ จข ฌ ย> respectively. The Thai value of these symbols is fairly close to the Lisu, apart from <ฌ> which is /ch/ in Thai, and /j/ in Lisu, but which is introduced to complete a uniform series of unit symbols for the palatal stops.

Sequences unlike Thai usage also occur with labialisation which is represented throughout by <ว>. In Thai phonology only the /aa/ vowel occurs after medial labialisation, so that the following single syllables in Lisu do not occur as such in Thai (although some similar sequences might occur as two syllables): <กวิ> /kwú/ 'able', <ขว> /swá/ 'reckon', <ลวิ> /lwí/ 'change', <ฌวิ> /jwí/ 'down there'.

A problem arises with the writing of the sequence /-we/, which is <เว>. In Thai this would be read /-ew/ rather than /-we/ but since final /-w/ is infrequent in Lisu any ambiguity between /-we/ and /-ew/ is insignificant. The sequence /-ywe/ is written <เวย> /sywe/ <เชย> 'touch'.

The full consonant phoneme chart including palatalisation and labialisation is overleaf.

There is possible ambiguity in the representing of /hyà/ <หย> 'serow goat' and the syllable /yà-/ <หย> as in /yàpu/ 'kerosene tin'. A distinction could be preserved by writing /yà-/ as in Thai หย.

The three nasal finals /m n ŋ/ will be written in the Thai orthography as final <ม น ง> respectively.

FULL CONSONANT PHONEME CHART INCLUDING PALATALISATION AND LABIALISATION

p	py	pw	pyw	t	ty	tw	tyw	ɕ	ɕw	k	kw
ป	ปย	ปว	ปยว	ต	จ	ตว	จว	ตช	ตชว	ก	กว
								ตล	ตลว		
ph	phy	phw	phyw	th	thy	thw	thyw	ɕh	ɕhw	kh	khw
พ	พย	พว	พยว	ท	ช	ทว	ชว	ทช	ทชว	ค	คว
ผ	ผย	ผว	ผยว	ถ	จ	ถว	จว	ทล	ทลว	ข	ขว
b	by	bw	byw	d	dy	dw	dyw	ɟ	ɟw	g	gw
บ	บย	บว	บยว	ด	ฌ	ดว	ฌว	ดช	ดชว	ง	งว
								ดล	ดลว		
f		fw		s	sy	sw	syw			x	xw
ฟ		ฟว		ซ	ซย	ซว	ซยว			ข	ขว
ฝ		ฝว		ล	ลย	ลว	ลยว			ห	หย
										ฮ	ฮย
v		vw		z	zy	zw				ญ	
ว		วว		ญ	ย	ญว				ฤ	
m	my	mw	myw	n	ny	nw	nyw			ง	งว
ม	มย	มว	มยว	น	นย	นว	นยว			ง	งว
				l	ly	lw					
				ล	ลย	ลว					

Thai long vowel symbols will be used to represent non-laryngealised Lisu vowels. The vowel chart of Lisu in Thai script is thus:

๕ (ฦ)	๕ (ฦ๑)	๕ (ฦ๒)
๕ (๕)	๕ (๕๑)	๕ (๕๒)
๕ (๕๑)		๕ (๕๒)

Laryngealised vowels on mid and low tones will be written as if they were Thai short vowels in "open" syllables on Thai high and low tones. The laryngealised vowel chart for Lisu mid and low tones is as follows:

๕ (ฦ)	๕ (ฦ๑)	๕ (ฦ๒)
๕ (๕๑)	๕ (๕๑๑)	๕ (๕๑๒)
๕ (๕๑๑)		๕ (๕๑๒)

Laryngealised vowels on high tone will be written as if they were Thai long vowels on Thai rising tone, since the acoustic effect is so similar.

In order to preserve the Thai system the symbol <๕> is both /?/

The vowel charts of labialised and palatalised syllables contain the following combinations in the Thai script.

i	yi	wi	ywi	ɨ	yɨ	wɨ	u	wu	ywu
ɛ	-ย็	-ยั	-ยยั	๕๑	-ย็๑	-ยั๑	๕	-๖	-ย๖
e	ye	we	ywe	ə	yə		ɔ	yɔ	wɔ
ɛ	เ-ย	เ-ว	เ-ยว	เ-๑	เ-ย๑		-๑	-ย๑	-ว๑
æ	yæ						a	ya	wa
แ-	แ-ย						-า	-ยา	-ว

[illegible]

The following chart shows the Lisu tone yielded by combinations of Thai script consonants and vowels, with the Thai diacritic tone marks.

	u	ʊ	i	ɪ	unmarked
Long vowel					
low class	-	high	-	-	mid
u and low class	-	(falling)	low	-	high (laryng.)
high class	-	(falling)	low	-	high (laryng.)
mid class	high	(falling)	low	high (laryng.)	mid
Short vowel					
low class	-	-	-	-	mid (laryng.)
u and low class	-	-	-	-	low (laryng.)
high class	-	-	-	-	low (laryng.)
mid class	mid (laryng.)	-	-	-	low (laryng.)

At first we thought that the tone clusters mentioned earlier are best written with a repeated syllable with zero consonant initial, indicated by -ə-. Thus /pha sy¹ɛ̌/ <พว ชยือ-อ่า> 'as soon as he had twisted it'. /pha sy¹ə̌/ <พว ชยือ-อ่า> 'as soon as he had died'; /sy¹ɛ̌/ <สยือ-อ๊ะ> 'it is new'.

However, in December 1972 it was noticed that students who knew Thai were having difficulty pronouncing the statement and question final markers. The problem arose because the students had not grasped the fact that the hyphen was intended to indicate that the glottal stop usually associated with <ə> was to be omitted. These markers were then written experimentally as <ɿ> and <ɿ?> respectively, so that 'He is going.' was written as <เฒ่า>, and 'Is he going?' was written as <เฒ่า?>. The experiment was highly successful, and it was found that many students were able to read the new forms without any prior explanation, two not even noticing that a change had been made.

Where tone clusters occur in a single morpheme and thus do not correspond with sequences of morphemes, as in forms like /nǎɛ̌/ [nǎɛ̌-ɿ], it might be better to write these as falling tones. This will need experimentation.

Question and statement intonations are taken care of by the tone of the final syllable. /dye¹ə̌/ <เฒ่า> 'he is going'; /dye¹ə̌/ <เฒ่า?> 'is he going?'.

The falling intonation before a pause can be reflected by space between phrases, with the phrases themselves written with conjoined letters, as in Thai. /a¹the nu b¹ɛ̌ nya, dye da¹ə̌/ <อาเทญนียะนยา เฒด่า>. For new readers this will probably be too difficult. An easier alternative would be commas, which are not always to be found on Thai typewriters.

The various kinds of emphatic stress could be marked by ! at the end of the sentence. Some typewriters again do not have this symbol.

An occasional problem will arise where reading a sequence with different stress patterns will yield different meanings. <ยี่เฒอชยือ-อ> read as /yí xé 'sy+u/ means 'he also died', but read as /yí 'xé sy+u/ means 'his louse died'. There does not seem to be too much point in trying to eliminate such ambiguity, as similar situations exist in all written languages (cf. English: 'overdue account book' where 'overdue' refers to either the account or the book depending on the stress; and Thai การขนส่งของไทย which can mean 'the transportation of Thai goods' or 'the Thai transport system').

Experience with the script has been limited, but for young people who have had Thai schooling very little coaching has been necessary to enable them to read the experimental primers which have been prepared.

For those with no previous schooling, results have varied widely.

Sample text

น่วอ อำนยี้ ถี่ มา ฅฯ. หนยี้ ฅย้อ. ยี้หว่า หนยี้ ฅย้อ
/nwó ànyí thǐ ma juá / nyǐ syǎ / yíwà nyǐ syǎ
up there last year one thing have two brothers they two brothers.
Once, a long time ago, there was a household of two brothers.

อ้าหะ อ่ามยา-อ่า มา ฅฯ. อ้าหะ บูล-อะ ถี่ มา ฅฯ.
áŋǎ àmyà ma juá / áŋǎ bulǎ thǐ ma juá /
buffalo many clf. have buffalo magic one clf. have
These two brothers had many buffaloes. They had one magic buffalo.

อ้าหะ บูล-อะ ถี่ มา ฅฯ. แบ๊ะ นยา ยี้ นยิหญา
áŋǎ bulǎ thǐ ma juá bǎ nyá yǐ nyǐ zà
buffalo magic one clf. have say if he younger brother
And the younger brother

ล ฅฯ. ถี่ นยิ ถี่ นยิ เหล. ล ฅฯ. ง แบ๊ะ นยา
lǎ cǎ thǐ nyǐ thǐ nyǐ lè / lǎ cǎ ŋu bǎ nyá
watch cause one day one day only watch cause yes say if
was made to look after it daily. And so,

๕ ๕ ล-อู ง แบ๊ะ นยา อ้าหะ บูล-อะ ฅ มา
sǎ khǐ lǎ u ŋu bǎ nyá áŋǎ bulǎ gu ma
three years watch yes say if buffalo magic that one
when he had been made to watch it for three years, that magic buffalo

หญา๕-อะ แล้ ปุ่ขว่า ๕หะ ๕ห่อฯ. ปุ่ขว่า ๕หะ ๕ห่อฯ
zà chǎ à lǎ pùxwá chwǎ ๕ə ๕ / pùxwá chwǎ ๕ə - ๕
orphan to speech speak to speech speak to
spoke to the orphan. Saying

ง แบ๊ะ นยา ฮาหม่อ๕ ๕หะ นยา นว ๕
ŋu bǎ nyá ha mǎ khǎ bǎ nyá nw kúku
yes say if this evening say if you elder brother
"This evening, your elder brother

นว ม้าหละ นว แล้ ยี เบว ๕ห่อ-๕หะ.
nwu mǎ lǎ nwu lǎ hi bwe ๕ə ๕ /
you sister-in-law you to house divide to
and your sister-in-law will give you your inheritance."

อ้าหะ บูล-อะ นยา เท ปู่ทว่า เจอะ เหต้อฯ.
 áŋù bulɥà nya the pùxwá chwè ɣèù /
 buffalo magic topic thus speech speak to
 The magic buffalo told him,

หญาฮือ-อุ-อุ นว อาซฮือ ถ่า เนอะ. ทละบู ษะ ป่า
 zà chɿ̀ ù nwu asɿ̀ thà nwə / ɬhà̀bu sɿ̀ pà
 orphan! you whatever don't want salt three measures
 "Orphan! Don't you take any of it. Three measures of salt

ตชาพว ษะ ป่า เท เล-เอ๋ เนอะ.
 ɬaphwu sɿ̀ pà the leə nwə /
 milled rice three measures thus only want
 and three measures of milled rice - that's all you should take."

อ้าหะ บูล-อะ เท เจอะ เหต้อฯ. อาตซ้อทซ้อ ฮีเฒ ง
 áŋù bulɥà the chwè ɣèù / aɬɿ̀ɬɿ̀ ɿ̀ je ɲu
 buffalo magic thus speak to truly return-go yes
 That is what the magic buffalo said, and in fact, when he went home,

เน๊ะ นยา อาตซ้อทซ้อ ฮี ฎุ. ฮี ม้าหละ ฮี แล ฮี เบว เหต้อ-จื.
 bɿ̀ nya aɬɿ̀ɬɿ̀ yí kúku yí máɿ̀ yí lá hi bwe ɣèy /
 say if truly he elder brother he sister-in-law he to house divide to
 that's what happened. His elder brother and sister-in-law really did
 give him his inheritance.

CHAPTER SIX

A K H A

PETER WYSS

The Akha language is a member of the "Lolo" group of languages which includes Lisu, Lahu, Lolo, and others. These languages form a sub-group of the Tibeto-Burman language family.¹ As such, the Akha language is fairly closely related to Burmese, and more distantly to the "Karen" languages.

The Akha people call themselves /ʔàkà/ <၁၁ံ၁>. They are also known by others as Kaw or E-kaw (Thai /ʔìkʰ/ <อีคว>). The majority of the 300,000-500,000 Akha speakers live in the southeastern part of Kengtung State in Burma.² Smaller groups live in the southwestern parts of Yunnan, China, in northwestern Laos, and in Chiang Rai Province of northern Thailand.

The form of Akha described in this paper is that spoken along the southernmost fringe of Akha dispersion, by the Akha living in Thailand. For purposes of convenience, this form of Akha will be called "Southern Akha", a term which should not be taken as a name for a dialect in any defined or rigorous sense. It is useful to distinguish some features of the form of Akha described here from those to be found further north, particularly as reflected in the work of Paul Lewis. Such forms will be referred to as "Northern Akha". Southern Akha is not homogeneous,

¹Burling 1967:1-4,28-9 and elsewhere; Benedict 1972:4-11. Other important references to the Akha include Lewis 1969; LeBar *et al.* 1966:33-7; Young 1966:1-8; Bernatzik 1947; Nishida 1965/1966, 1966.

²Lewis 1968a:8. These figures are considerably larger than those of LeBar *et al.* (1966:34), which lists something over 100,000 total Akha speakers, but recognises that the figure is probably too small.

and Northern Akha less so. The Akha population of Thailand came from different parts of Akha areas in Burma, and differences of pronunciation are to be found in a single village, but characteristic phonological differences between Southern and Northern Akha as here defined are to be found, and are so labelled.

The Akha population in Thailand has been estimated at 7000 people (Hanks *et al.* 1964), but it is steadily increasing with new migrations. In Thailand the Akha inhabit the area west of the Chiang Rai-Mae Sai road, up to the Burma border. The two biggest concentrations are north of the Mae Kam river up to the Burma border and between the Mae Kam and Mae Chan rivers. A few villages are located near Mae Sai, Chiang Saen and between the Mae Chan and Mae Kok rivers.

Since 1964¹ a new migration south has begun, which includes villages around Doi Tung. A large group from Kayeh /káyà/ <คำหญ่>, about 50 households, moved south of Doi Chang into the Mae Suai District. Early in 1967 Akha from Mae Sai District moved to Nong Waen near the Yao settlement in Mae Chan District. At the same time a large group of 33 houses moved south of Doi Bo, Tambon Mae Yao, in Chiang Rai District. These Akha came from five different villages: mainly from Pa Kluay (ป่ากล้วย) /bàgò/ <ป่ากล้วย>, but also from /pábí/ <ป่าบือ>, /nàñi/ <น่านี>, /màýá/ <หม่ายา> and /básà/ <บ่าสา>. It is quite likely that the migration will continue, and Akha have already gone to find land for possible future locations south of Thoeng and Phayao.

Data for this paper were gathered over a period of six years (with several interruptions) in the Kayeh /káyà/ <คำหญ่> area. From early 1966-8 I have been resident in the small Kayeh New Village /káyà ycsíq/ <คำหญ่ ยอสี>, and since 1968 in Huai Chang /xòsà/ <ห้วยสำ> east of Doi Chang in Chiang Rai District.²

¹This migration began after the research reported in Hanks *et al.* 1964, 1965 was completed, but with the exception of a few families migrating from Burma, it concerns people from villages which are included in the above report.

²All my contacts with Akha have been on a monolingual basis. I have used six main informants:

/ʔáju/ <อาญ> was born in 1948 in /lɔdɔ́n/ <ลอดดิม> village on the border between Thailand and Burma. His father came from /mèxà/ <เหมอหน> village. He belongs to the /cēmí/ <เชอหม> family group. (There are more than two dozen such family groups, and new ones are still being formed.)

/ʔáson/ <อาสอน> was born in 1930 in the border village of /xopí/ <โฮป>. His father moved there around 1918 from /cəqkəq/ <เลอะกะ> village. He belongs to the /cēmí/ <เชอหม> family group, and was the informant used by Smalley (1964b) while checking on some phonological problems.

/bɔsɔ́q/ <บอสะ> was headman /búsà/ <บุแซ> of Kayeh New Village, before he moved to Mae Suai. His grandfather brought the family to Thailand around 1920. At first they lived in the village of /mabí/ <แมบ>. They moved to Kayeh /káyà/ <คำหญ่> in 1929

(continued on page 151)

The syllable

The phonological structure of Akha may best be understood in terms of the syllable and its components. Each syllable is composed of an initial consonant C, followed by a vowel V. The latter is accompanied by simultaneous tone *t*, register *r* and an optional nasality (*n*).

Because of the extremely strong bearing which register has in modifying the segmental features of the Akha syllable in various ways, in describing the phonological structure we shall follow the diagram in Chart 1, beginning with register. The arrows indicate the major phonological conditioning environments, with the tail of the arrows pointing to the environment and the head toward the part of the syllable in which a variety of realisations is possible.

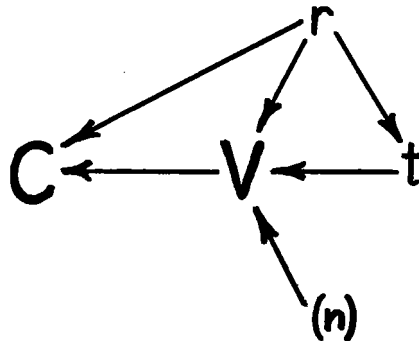


Chart 1. Syllable structure

Register

Register in Akha occurs on two levels which are realised by different vowel, tone, and consonant allophones. Phonetically, register differences are produced by muscle movements of the pharyngeal and faucal

(continued from previous page)

where he was born in 1935. He belongs to the family group of the /mayëq/ <มาเย>.

/búsë/ <บูเซ> was born in 1942. Her grandfather came from /mëxà/ <เหมอแห>. She had moved with her parents to /pábí/ <พาบือ>, /màvǎ/ <หม่าย่า>, /básà/ <บาส่า>, /bàgò/ <บ่าโง> and in 1963 was married in Kayeh /káyǎ/ <คาเหย>. Before marriage her family group was /ʔáti/ <อาตือ>.

/móxà/ <ม็อหา> was born in 1943 in /mǎxà/ <แม่หา> village. His father is the shaman /píma/ <พินา> of /loqgoq/ <โละโง> village, which is Samakit (สามัคคี), and where his grandfather /jàʔí/ <จาฮือ> is the religious headman /jòma/ <จอมมา>. Their locations before 1943 were /mǎbí/ <แม่บือ> (see also informant /bɔsǒq/ <บอเซ>), /lɔdín/ <ลอดิม>, /mǎsǎ/ <แม่สา>, /pálà/ <พาลา> etc. He belongs to the family group of the /jòdon/ <จอมดอง>.

/búddò/ <บูโด> was born 1948 in /bàcàq/ <บ่าจะ> and was married to informant /ʔájú/ <อาจู> in 1966. She belonged to the family group of the /lǎcǎq/ <แล้เจ>.

The Akha cycle of twelve years has been used to reconstruct some historical facts about migration and geographical dialects. These were used in preparing the biographies of the informants.

In addition to what I owe my Akha friends, I am indebted to William A. Smalley, Norman A. Mundhenk and E.R. Hope, who have given me advice and encouragement in writing this article.

apparatus (Smalley 1964b).

Low register results from a relaxed pharyngeal and faucal apparatus, expanding the entrance to the throat into an open pharyngeal cavity. The acoustic effect is that of a "hollow" or "soft" vowel quality accompanied by a free flow of pharyngeal air in varying degrees of "breathiness", depending on the position and configuration of the vowel articulators.

High register results from a contraction and tightening of the faucal pillars and pharyngeal walls, reducing the volume of resonance in the narrowed pharyngeal cavity. This results in a tense, restrained and "choked" acoustic effect.

A non-phonemic final glottal stop always occurs with high register in pre-pausal position, but may or may not occur on low register. In this paper, high register is indicated by the convention /-q/[-Y], and low register by the absence of these symbols. It must be remembered however, that register is a suprasegmental feature occurring simultaneously with the vowel although it is written in post-vowel position.

/sɔ́/	[ʃhɔ ²]	<၁>	'to be pure'
/sɔ́q/	[ʃɔ́ʔ ¹]	<၁၁>	'to figure out'
/tæ/	[tæ ⁵]	<၁၁>	'to chase'
/tæq/	[tæʔ ⁴]	<၁၁၁>	'to hammer'
/dæ/	[dæ ⁶]	<၁၁>	'to hit'
/dæq/	[dæʔ ⁷]	<၁၁၁>	'to be alive'

Tone





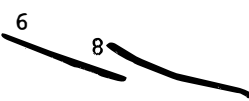

Pitch	Low register (oral)	High register (faucalised)
High /' /		
Mid / /		
Low /\ /		

Chart 2. Phonetic pitch

[¹] = extra high	[⁵] = mid
[²] = high	[⁶] = low-mid
[³] = high-mid	[⁷] = low
[⁴] = mid-high	[⁸] = extra low

The eight phonetic pitches shown in Chart 2 are realisations of three phonemic tones. [¹ ⁴ ⁷] occur with high register, while [² ³ ⁵ ⁶ ⁸] occur with low register. [² ³], [⁶ ⁸] respectively are in complementary distribution in environments consisting of sequences of the same phonemic tone on the same register, as will be described more specifically below. All phonetic tones, except tone [¹], occur frequently. The phonemic contrasts in tone and register may be demonstrated as follows.

/jʰ/ <ជីវ> 'to live'	/jʰq/ <ជើង> 'according'
/jɔ/ <ជូ> 'to learn'	/jɔq/ <ជេង> 'to be squashed'
/jɔ̃/ <ជង> 'to ambush'	/jɔ̃q/ <ជេង> 'to be related'

Some of the main characteristics of Akha tones are as follows:

/ˈ/ high tone

[¹] extra high, occurring with high register, is not found in many words, but it does occur in a few very commonly used words. An increasing number of loan words carry this pitch. /gʰq/ [gʰq¹] <ជើង> 'to be worthy'.

[²] high occurs with low register. /ʔàgá/ [ʔa⁸ga²] <ទីវា> 'where'.

[³] high-mid occurs with low register, and ranges from slightly lower than [²] to close to [⁵]. It occurs before [²] within a stress unit. /ʔábv/ [ʔa³ba²] <ទីវា> 'tree'; /nó ʔàgá jʰ-lee/ [no²ʔa⁸ga³jʰ²lee⁵] <នឹង ទីវា ជីវ-លេ> 'where do you live'.

/unmarked/ mid tone

[⁴] mid-high occurs with high register. /baqlɔq/ [ba⁴lɔq⁴] <បើងទេ> 'men's side in Akha house'.

[⁵] mid occurs with low register. /bo/ [bo⁵] <បូ> 'bellows'.

/˘/ low tone

[⁶] low-mid occurs with low register before [⁸] in a stress unit or as the second in a sequence of three /˘/ on low register. /bòcòn/ [bo⁶çh⁸] <ប៉ូង> 'a bamboo container'; /ʔábv tì bò/ [ʔa²ba⁸thi⁶bo⁸] <ទីវា ប៉ូ ប៉ូ> 'one shrub'; /ʔábv tì bó/ [ʔa³ba²thi⁸bo²] <ទីវា ប៉ូ ប៉ូ> 'one tree'.

[⁷] low occurs with high register. /pòqlòq/ [po⁷lɔq⁷] <ប៉េងទេ> 'banana leaf'.

[⁸] extra low occurs with low register. A slight final drop of pitch is a special characteristic of this tone and occurs in pre-pausal position. /lóbò/ [lo²bo⁸] <តែប៉ូ> 'tea'; /bòlɔ/ [bo⁸lɔ⁵] <ប៉ូល> 'cup'.

like bamboo container'.

Vowels

	Front		Central	Back	
	<i>unrounded</i>	<i>rounded</i>		<i>unrounded</i>	<i>rounded</i>
High	i	ü		ɨ	u
Mid	e	ö		ɛ	o
Low	æ		a		ɔ
Rising	ay			aw	
Nasalised		an	ɨn	ɔn	

Chart 3. Vowel phonemes

Akha has eleven simple vowel phonemes and five complex ones. All simple vowel phonemes are found on both registers.

Varying degrees of breathiness occur according to the position of the vowel (Chart 4). It is more distinct with rounded vowels than with unrounded, stronger with back vowels than with front vowels and strongest with low vowels, but diminishing to a faint breathiness with high vowels. Breathiness tends to be stronger with low tone and weaker with high tone. Breathiness may be detected in its faintest form with vowel /i/ on high tone, strongest with vowels /a/ and /ɔ/ on low tone.

	Low register				High register
	unrounded		rounded		
	Front <i>less</i>	Back <i>more</i>	Front <i>less</i>	Back <i>more</i>	
High	<i>faint</i> i ɨ		<i>weak</i> ü u		<i>No breathiness</i>
Mid	<i>weak</i> e ɛ		<i>strong</i> ö o		
Low	<i>strong</i> æ a		<i>very strong</i> ɔ		

Chart 4. Degree of breathiness on vowels, excluding the pitch factor

When occurring with high register, the whole set of vowels is realised with another set of features than those realised with low register. All vowels are shorter in duration. Tense faucal vowel quality and an abrupt "choked" sound occurs rather than breathiness. In addition, high vowels are slightly lower and low vowels are slightly higher than their realisation with low register.

/i/ [i] high, front unrounded, similar to the vowel in *me* or Thai /ii/ = as in ฦ. /sì/ [ʃhi⁸] <ສີ> 'to sharpen'; /sìq/ [ʃi⁷] <ສີ> 'to wipe dry'.

/e/ [e] mid, front, unrounded, similar to the vowel in *way* without a glide, or Thai /ee/ ເ- as in ເ. /bye/ [b⁵ye⁵] <ເຍ> 'to hate'; /ʔábyèq/ [ʔa²b⁵yè⁷] <ອ້າເຍຍ> 'bamboo shoot'.

/æ/ [ɛ] mid-low, front, unrounded, similar to the vowel in *get*, but slightly lower, approximately between Thai vowels /ee/ ເ- and /εε/ ມ-. Occurs with palatalised consonants /py by my c j ñ s y/. /byæ/ [b⁵ye⁵] <ເຍຍ> 'to open (one's eyes)'; /sàbyæq/ [ʃha⁸b⁵yè⁷] <ສ້າເຍຍ> 'raw cut meat'.

[æ] low, front, unrounded, similar to the vowel in *hat*, or Thai /εε/ ມ- as in ມປດ. Occurs elsewhere. /bæ/ [b⁵æ⁵] <ເຍ> 'to begin, create'; /bæq/ [b⁵æ⁷] <ເຍຍ> 'to kick'.

/ü/ [ü] high, front, rounded, but less than in German Tür. /cũũ/ [çhũ³ü²] <ອ້າສ້າ> 'bamboo flute'.

/ö/ [ö] mid, front, rounded, but less than in German Möhre. /tö/ [thö⁵] <ເກ> 'pronoun clitic'; /töq/ [tö⁷] <ເຕີ> 'classifier for small packages'.

/a/ [a] lower-low, central, unrounded, similar to the vowel in the British pronunciation of *path*, or Thai /aa/ -າ as in ມ້າ. /xa/ [ha⁵] <ອາ> 'to welcome'; /xaq/ [xə⁷] <ອ> 'to be strong'.

/ĩ/ [ĩ] high, back, unrounded, similar to Thai /++/ ະ as in ສາ, but in a more back position and slightly higher. A characteristic feature of this vowel is a tightening of the faucal pillars and a visible lifting of some of the throat muscles. In spite of the fact that this feature is very similar to the faucalised vowel quality on high register, this vowel occurs on both low and high register and other features of register are in contrast. /dĩ/ [dĩ⁵] <ດີ> 'verb intensifier'; /dĩq/ [dĩ⁷] <ດີ> 'to immerse'.

/ë/ [ë] mid, back, unrounded, similar to the vowel in the British pronunciation of *hurt*, or Thai /əə/ ເ- as in ເາ, but slightly more back. /të/ [thë⁵] <ເາ> 'that'; /tëq/ [të⁷] <ເາ> 'to toss, twist'.

/u/ [u] high, back, rounded, similar to the vowel in *pool*, or Thai /uu/ ู as in ู. /pù/ [phu⁸] <พู่> 'to swell'; /pùq/ [pyʔ⁷] <ปุ> 'to soak'.

/o/ [o] mid, back, rounded, similar to the vowel in *o-oh!* (exclamation of dismay), or Thai /oo/ ู- as in ู. /ǵò/ [ǵo⁸] <โถ> 'to chew'; /ǵòq/ [ǵoʔ⁷] <โถ> 'return'.

/ɔ/ [ɔ] low, back, rounded, similar to the vowel in *dog*, or Thai /ɔɔ/ -อ as in ้อ. /ǵò/ [ǵɔ⁸] <โถ> 'to separate'; /ʔàǵòq/ [ʔa⁸ǵɔʔ⁷] <ฉ่า> 'a needle'.

The two glided vowels in Akha have come into the language through recent borrowings. The total number of words which contain them is under two dozen. These vowels occur, however, in easily and fully assimilated borrowed words, and must be included in the synchronic picture. Glided vowels occur only on low register (so far), but can be found on all three tones. Their acoustic duration is short to medium, like oral vowels on low register.

/ay/ [aⁱ] glide from lower-low, central, unrounded to high, front, unrounded, similar to the glide in *by*, or Thai /ai/ ใ- as in ใ. /yɔxàɣ/ [yɔ⁵haⁱ⁸] <ยอ> 'bad, evil'; /lay/ [laⁱ⁵] <แล> 'square measurement'.

/aw/ [a^o] glide from lower-low, central, unrounded to mid, back, rounded, similar to the glide in *now*, or Thai /ao/ ใ- as in ใ. /bàw/ [ba^{o8}] <บ> 'power'; /law/ [la^{o5}] <ล> 'Laos'.

The very common feature of nasality in Akha structure occurs in three contrasting forms, two of which are old, and the third due to recent borrowings. Phonetically these are a nasalised vowel [ẽ], a syllabic [ɱ], and a sequence [am]. The nasalised vowel [ẽ] occurs only on low register. Syllabic [ɱ] is mainly found on low register, but in a few rare instances on high register following consonant /n/. Only one contrast is recorded. [am] occurs only on low register (so far).

Though nasality is written phonemically by the convention /-n/ in syllable final position, it must be remembered that some of the features of nasality are not to be interpreted as a sequence of vowel plus final nasal consonant, but rather as occurring simultaneously with the vowel. In [ɔŋ] and [am] it is realised, of course, as a sequence of vowel plus nasal consonant, and in [ɱ] as a syllabic nasal.

/ɔn/ [ẽ] low, back, rounded, nasalised. Has very high frequency. It may be heard as [ã] particularly with preceding consonants in labial and alveolar positions. May also sporadically be found realised with a final consonant [ŋ]. /lókòŋ/ [lɔ²khɔ⁸] or [lɔ²khɔŋ⁸] <ล> 'spirit

gate'; /dɔn/ [dɔ̃⁵] or [dɔ̃⁵] <ดอง> 'to have time'; /ʔɔ̃n/ [ʔɔ̃²] <ออง> 'to possess'.

/ɪn/ [ɪ̃] voiced, bilabial, syllabic nasal, which may be realised as a lower-high, back vowel [ĩ] or [u] followed by consonant /m/. [ĩ] may be realised when occurring with high tone, [u] with low tone. /dɪn/ [dɪ̃⁵] <ดิม> 'to wear clothes'; /ʔɪn/ [ʔɪ̃²] or [ʔĩ²] <อิม> 'to work'; /ʔɪ̃gɪ̃n/ [ʔu⁶ɪ̃gɪ̃⁸] or [ʔu⁶ɪ̃gɪ̃⁸] <อู๋ม> 'pillow'; /yɔ̃nɪ̃n/ [yɔ̃⁵ɪ̃nɪ̃⁵] <ยอนิม> 'mildew'; /yɔ̃nɪ̃qɪ̃n/ [yɔ̃⁵ɪ̃nɪ̃⁴] <ยอนิม> 'powder'.

/an/ [am] is realised as a sequence of a lower-low, central, unrounded vowel followed by consonant /m/. /ʔáɣàn/ [ʔa²yam⁸] <อาหยัง> 'time, season'; /lan/ [lam⁵] <ลา> 'classifier for million'; /cán/ [çham²] <ชา> 'a crossbeam on Akha house'.

Consonants

	Bilabial	Labio-palatal	Alveolar	Palatal	Velar	Glottal
Stops						
<i>voiceless</i>	p	py	t	c	k	ʔ
<i>voiced</i>	b	by	d	j	g	
Nasals						
	m	my	n	ɲ	ŋ	
Fricatives						
<i>voiceless</i>				s	x	
<i>voiced</i>			l	y	ʒ	

Chart 5. Consonant phonemes

There are no phonemic consonant clusters in Akha, nor do any consonants occur in syllable final position. Akha consonant phonemes have different realisations when occurring with different registers, as may be seen in Chart 6 (overleaf).

The voiceless stops are aspirated when they occur with low register. A set of unaspirated stops occurs in complementary distribution on high register. Unaspirated stops, however, may occur in free fluctuation with aspirated stops on low register. The condition of their most likely occurrence is realised with high vowels on high tone. This feature of fluctuation is parallel to that which occurs with other voiceless consonants notably those in palatal and velar positions (see Charts

7 and 8). The vowel, however, which occurs with such unaspirated stops is that of low register quality. Aspirated stops never occur with high register.

		Low register	High register
Stops	<i>voiceless</i>	aspirated [h]	unaspirated
	<i>voiced</i>	fortis [ʔ]	lenis
Nasals		fortis [ʔ]	lenis
Fricatives	<i>voiceless</i>	aspirated [h]	unaspirated
	<i>voiced</i>	fortis [ʔ]	lenis

Chart 6. Consonant realisations conditioned by register

The voiced stops occur as fortis on low register and lenis on high register. The nasals show very much the same kinds of allophones as voiced stops, but their distinction between fortis and lenis is considerably weaker. The fricatives, voiceless and voiced, are modified in their intensity of friction, fortis on low register and lenis on high register. In addition, the voiceless fricatives are accompanied by aspiration on low register, which is absent on high register, parallel to the system of aspiration with voiceless stops.

These consonant allophones are again influenced by the tongue position for the vowel with which they occur as shown in Chart 4. Features such as aspiration, voicing, fortis or lenis quality, intensity of friction, etc., tend to be lighter or heavier on the same scale as breathiness shown in Chart 4. By comparing Chart 5 and 6, it is quite obvious that these variations of consonant qualities take on extreme proportions where two distinct qualities, aspiration or voiced articulation plus friction, overlap in one single phoneme. This happens with consonants in labio-palatal, palatal and partially also in velar position.

The palatalised consonants are interpreted as single units in Akha, not as clusters, although those in labio-palatal position are written as digraphs, for convenience, in phonemic writing /py by my/.

/p/ [ph] voiceless, aspirated, bilabial stop, similar to the initial consonant in *pair* or Thai /ph/ ㅍ as in ㅍ๑. Occurs only with low register. /pù/ [phu⁸] <ꨀꨣ> 'to swell'; /pá/ [pha²] <ꨀꨣ> 'to change'.

[p] voiceless, unaspirated, bilabial stop, similar to *p* as in *spider* or Thai /p/ ㅍ as in ㅍ. Occurs always with high register. Occurs

also in free fluctuation with [ph] on low register specifically before high vowels. /pùq/ [pʰʉʔ⁷] <ပျ> 'to boil'; /paq/ [pʰʉʔ⁴] <ပျ> 'to divide'; /puka/ [phu⁵kha⁵] or [pu⁵kha⁵] <ပုကာ> 'open space in the centre of village'.

/b/ [b] voiced, fortis, bilabial stop, similar to the consonant in *bee*, or Thai /b/ บ as in บ่อ. Occurs with low register. /bæ/ [bæ⁵] <ဃ> 'to begin, create'; /bo/ [bo⁵] <ဃ> 'to herd, look after'.

[b] voiced, lenis bilabial stop, similar to above. Occurs with high register. /bæq/ [bæʔ⁴] <ဃ> 'to kick'; /bòq/ [bòʔ⁷] <ဃ> 'to embroider, write'.

/m/ [m] voiced, fortis, bilabial nasal, similar to the consonant in *my*, or Thai /m/ ม as in หมอ. Occurs with low register. /mà/ [mà⁸] <ဃ> 'to teach'; /mò/ [mò⁸] <ဃ> 'to aim a gun'.

[m] voiced, lenis, bilabial nasal, similar to the above. /màq/ [màʔ⁷] <ဃ> 'to be hungry'; /mòq/ [mòʔ⁷] <ဃ> 'to desire, want'.

/py/ [phʲ] voiceless, aspirated, labio-palatal stop, similar to the initial consonant in *pure*. Occurs with low register. /pyà/ [phʲa⁸] <ဃ> 'to have a fever'; /ʔùpyà/ [ʔu⁶phʲa⁸] <ဃ> 'a branch'.

[pʲ] voiceless, unaspirated, labio-palatal stop, similar to the *p* in *dispute*. Occurs with high register. /pyàq/ [pʲʉʔ⁷] <ဃ> 'to carve'; /nĩqpyaq/ [nĩʲpʲʉʔ⁴] <ဃ> 'soybean'.

A rare non-phonemic variation may sporadically be heard as [phl] with low register and [pl] with high register. These allophones are similar to the Thai clusters /phl/ พล as in พลาง and /pl/ ปล as in ปลา. More frequent occurrences of this kind are reported from areas East and North-East of Kengtung State in Burma.¹

/by/ [bʲ] voiced, fortis, labio-palatal stop, similar to the initial sound in *beauty*. Occurs with low register. /byà/ [bʲa⁸] <ဃ> 'bee'; /byö/ [bʲö⁵] <ဃ> 'to burrow'.

[bʲ] voiced, lenis, labio-palatal stop, similar to the above. Occurs with high register. /byàq/ [bʲʉʔ⁷] <ဃ> 'to be striped'; /byoq/ [bʲʉʔ⁴] <ဃ> 'to disappear'.

A rare non-phonemic variation [bʲl] and [bl] occurs with low and high register parallel to the system as mentioned above under the voiceless labio-palatal stop.

¹In his earlier work Paul Lewis wrote all forms: Northern Akha <py pl, by bl, my ml> as distinct. Since 1962 <py by my> represent the pairs [py pl], [by bl], [my ml], respectively, in the popular literature (1968a, 1968b).

/mʏ/ [mʏʷ] voiced, fortis, labio-palatal nasal, similar to the initial sound in *mule*. Occurs with low register. /mʏà/ [mʏʷa⁸] <หมย๋> 'to clear with knife'; /mʏḃ/ [mʏʷḃ⁸] <หมย๋> 'goods, possessions'.

[mʏ] voiced, lenis, labio-palatal nasal, similar to the above. Occurs with high register. /mʏàq/ [mʏʷq⁷] <หมย> 'to be slow'; /mʏḃq/ [mʏʷḃ⁷] <หมย> 'to lie'.

A rare non-phonemic variation occurs sporadically and is parallel to the system as mentioned above.

/t/ [tʰ] voiceless, aspirated, alveolar stop, similar to *t* as in *tool*, or Thai /tʰ/ ท as in ทา. Occurs on low register only. /tæ/ [tʰæ⁵] <ทน> 'to chase'; /tḃ/ [tʰḃ⁸] <ถ> 'to load'.

[t] voiceless, unaspirated, alveolar stop, similar to the *t* in *style*, or Thai /t/ ต as in ตา. Occurs always with high register and is in free fluctuation with [tʰ] on low register and particularly before high vowels on high tone. /tæq/ [tʰq⁷] <ต> 'to hammer'; /tḃq/ [tʰq⁷] <เต> 'to pour (solids)'; /pḃtḃ/ [phḃ⁸tḃ²] or [phḃ⁸tḃ²] <บ> 'a type of basket'; /yḃtḃ/ [yḃ⁵tḃ²] or [yḃ⁵tḃ²] <ย> 'tiny'.

/d/ [d] voiced, fortis, alveolar stop, similar to the initial consonant in *day*, or Thai /d/ ด as in เด็ด. Occurs with low register. /dḃ/ [dḃ⁸] <ด> 'to wait'; /ʔàda/ [ʔa⁸dḃ⁵] <อา> 'father'.

[d] voiced, lenis, alveolar stop, similar to the above. Occurs with high register. /dḃq/ [dḃq⁷] <เด> 'to perch'; /dḃqḃ/ [dḃ⁷qḃ⁸] <เด> 'axe'.

/n/ [n] voiced, fortis, alveolar nasal, similar to the consonant in *no*, or Thai /n/ น as in นา. Occurs with low register. /nḃ/ [nḃ⁸] <น> 'threads in weaving loom'; /nḃḃ/ [nḃ⁸ḃ⁸] <น> 'a stool'.

[n] voiced, lenis, alveolar nasal, similar to above. Occurs with high register. /nḃq/ [nḃq⁷] <น> 'ghost'; /ʔánḃq/ [ʔa²nḃ⁷] <น> 'a seed, kernel'.

/l/ [l] voiced, alveolar lateral, similar to the initial consonant in *loop*, or Thai /l/ ล as in ลิง. Occurs with both registers. /læ/ [læ⁵] <ล> 'to form a ball'; /læq/ [læq⁷] <ล> 'to take off'.

The consonants in palatal position with the exception of the nasal /ɲ/ are realised in a wide range of different allophones which include very subtle to very obvious distinctions. With the affricated stops /c/ and /j/ the tongue position is realised in the closure of the stop by various degrees of tip to blade release, thus with /c/ resulting in phonetic values ranging from [ç] to [çʰ] and with /j/ from [ɟʷ] to [ɟʷʰ]. A similar feature occurs with the fricatives /s/ and /y/ where the

grooved configuration of the tongue may have various degrees of fronted to backed positions, resulting with /s/ in phonetic qualities from [s̟] to [ʃh] and with /y/ from a sporadic [z] to [y̟].

Chart 7 indicates various modifications on consonants in palatal position in a most general and relative way, except /ñ/. Modifications caused by pitch are not indicated, but generally consonant qualities such as aspiration, voiced articulation and friction tend to be lighter on high tone and heavier on low tone. The squares with the unconnected crosslines indicate areas of fluctuation under the conditions shown in the chart. Of the four allophones shown in one square with unconnected lines, fluctuation with the two adjoining of one particular allophone may occur, but occurs most unlikely with the one opposite of that particular allophone, e.g. [çh] fluctuates likely with adjoining [ç̟h] and [çh], but fluctuates most unlikely with opposite [ç̟h]. Allophones shown in parentheses may occur sporadically.

		Low register				High register			
Consonant position	Vowel position	Affric. stop		Fricatives		Affric. stop		Fricatives	
		unr.	rd.	unr.	rd.	unr.	rd.	unr.	rd.
voiceless	high	çh	çh	ʃh	ʃh	ç̟(tʷ)	ç̟	ʃ̟	ʃ̟
	low	ç̟h	ç̟h	ʃ̟h	ʃ̟h	ç̟̟	ç̟̟	ʃ̟̟	ʃ̟̟
voiced	high	j̟	j̟	y̟(z)	y̟	d̟ʷ	d̟ʷ	y̟	y̟
	low	j̟̟	j̟̟	y̟̟	y̟̟	d̟̟ʷ	d̟̟ʷ	y̟̟	y̟̟

Chart 7. Major allophones of /c j s y/. [ç̟] = tip released with affricated stops fronted with fricatives; [ç̟̟] = blade released with affricated stops backed with fricatives; [h] = aspirated with affricated stops airstream with fricatives; [ç̟̟̟] = fortis

/c/ [ç̟h] to [ç̟h] voiceless, aspirated, alveolar to alveo-palatal affricated stop, similar to the initial consonant in *chair*, or Thai /ch/ ๕ as in ๕๑๑. Occurs with low register. /c/ [ç̟hi⁵] <๕> 'to reach out and take'; /c̟/ [ç̟h̟⁸] <๕๑> 'dew'.

[ç̟] to [ç̟̟] voiceless, unaspirated, alveolar to alveo-palatal

affricated stop, similar to the final sound in *sits*, or Thai /c/ ฉ as in ฉ. Occurs with high register. Occurs sporadically in fluctuation with [ɕh] on low register, particularly before high vowels and before high tone. /ciq/ [ɕiʔ⁴] <ฉิ> 'to pull (feathers)'; /cɛq/ [ɕɛʔ⁷] <ฉะ> 'a snipe'; /cɪ/ [ɕhi²] or [ɕi²] <ฉิ> 'oil, lard'; /ʔácó/ [ʔa³ɕo²] or [ʔa³ɕho²] <ฉาฉิ> 'personal name'.

/j/ [j] to [j̥] voiced, fortis, alveolar to alveo-palatal affricated stop, similar to the initial consonant in *jail*. Occurs with low register. /jù/ [ju⁸] <หุ> 'to shiver'; /ʔájí/ [ʔa³ji²] <ฉาฉิ> 'bird'.

[dʲ] to [dʲʰ] voiced, alveolar to alveo-palatal affricated stop, similar to the initial sound in *dew*. Occurs with high register. /jùq/ [dʲuʔ⁷] <หุ> 'to be wrinkled'; /jaqɕà/ [dʲaʔɕà⁸] <หะ> 'medicine'. Fluctuates sporadically with [j̥] on low register. The voicing of the consonant is slightly realised as fortis [dʲʰ]. /jáʔí/ [ja³ʔi²] or [dʲa³ʔi²] <ฉาฉิ> 'gravy'.

/s/ [ɕh] to [ɕh̥] voiceless, aspirated, grooved, alveolar to alveo-palatal fricative, similar to the initial consonant sound in *shy*, or Thai /s/ ศ as in ศ. Occurs with low register. /só/ [ɕho²] <ห> 'to be pure, grey'; /sámó/ [ɕhɛ³mo²] <หะ> 'louse'.

[ɕ] to [ɕ̥] voiceless, unaspirated, grooved, alveolar to alveo-palatal fricative, similar to the above. Occurs with high register. /sóq/ [ɕʔ¹] <ห> 'to figure out'; /səq/ [ɕiʔ⁷] <ห> 'number seven'.

/y/ [y] to [y̥] voiced, fortis, alveo-palatal fricative, similar to the initial consonant sound in *year*, or Thai /y/ ย as in ย. Occurs with low register. /yà/ [ya⁸] <ห> 'to sacrifice'; /ʔùýá/ [ʔu⁸ye²] <ห> 'rain'.

[z] voiced, alveolar fricative, similar to the initial consonant in *zoo*. Occurs in sporadic free fluctuation with [y] to [y̥] on low register. /yě/ [yě²] or [zě²] <ห> 'to buy'; /yí/ [yi²] or [zi²] <ห> 'a generation'.

[ɣ] to [ɣ̥] voiced, lenis, alveo-palatal fricative, similar to the initial consonant in *you*, but with less friction and voicing. Occurs with high register. /yàq/ [ɣaʔ⁷] <ห> 'to camp'; /yaqpyó/ [ɣa⁴phyo²] <ห> 'a broom'.

/ñ/ [ñ̥] voiced, fortis, palatal nasal, similar to the initial sound in *new*, or Northern Thai /ñ/. Occurs with low register. /ñæ/ [ñæ⁵] <ห> 'to flutter'; /ʔàñò/ [ʔa⁶ño⁸] <ห> 'buffalo'.

[ñ] voiced, lenis, palatal nasal, similar to the above. Occurs with high register. /ñæq/ [ñɛʔ⁴] <ห> 'to blaze'; /ʔáñoq/ [ʔa²ñoʔ⁴]

<ᨿᩢ᩠ᨿ> 'rattan'.

/k/ [kh] voiceless, aspirated, velar stop, similar to the initial consonant in *king*, or Thai /kh/ ค as in คน. Occurs with low register. /ka/ [kha⁵] <ค> 'to plant'; /ʔàkʰ/ [ʔa⁶khĩ⁸] <᩠᩠᩠᩠> 'dog'.

[k] voiceless, unaspirated, velar stop, similar to the consonant *k* in the initial cluster in *skill*, or Thai /k/ ก as in กะ. Occurs with high register and fluctuates with [kh] on low register, particularly on high tone. /kaq/ [kəʔ⁴] <กᨿ> 'crossbow'; /kòq/ [kəʔ⁷] <᩠᩠᩠> 'six'; /kápyʔ/ [kha³phɯ²] or [ka³phɯ²] <ค้ำพย> 'wall'.

/g/ [g] voiced, fortis, velar stop, similar to the initial consonant in *good*. Occurs with low register. /gà/ [ga⁸] <᩠᩠᩠> 'to hear'; /xògú/ [hə⁸gu²] <᩠᩠᩠> 'duck'.

[g] voiced, lenis, velar stop, similar to the above. Occurs with high register. /gàq/ [gəʔ⁷] <᩠᩠᩠> 'to trade'; /guq/ [guʔ⁴] <᩠> 'to be afraid'.

/ŋ/ [ŋ] voiced, fortis, velar, nasal, similar to final sound in *sing*, or Thai /ŋ/ ง as in ง. Occurs with low register. /ŋə̌/ [ŋə̌⁸] <᩠᩠᩠> 'to speak'; /ŋǝ̌/ [ŋǝ̌²] <᩠᩠᩠> 'to cry, weep'.

[ŋ] voiced, lenis, velar nasal, similar to the above. Occurs with high register. /ŋə̌q/ [ŋə̌ʔ⁷] <᩠᩠᩠> 'to be empty'; /ŋǝ̌q/ [ŋǝ̌ʔ⁷] <᩠᩠᩠> 'to cock a crossbow'.

The voiceless, velar fricative /x/ which has one of the highest frequencies in Akha is realised in as wide a range of allophones as the consonants in palatal position. One of these allophones is [h] which is very similar to the consonant in *he*, or Thai ห, อ. Allophones [xh] and [ɤh] are similar to Northern Thai /x/, which corresponds to Central Thai /kh/ ข, ค. As can be seen from Chart 8 the distinct allophonic differences occur with low and high register. On low register /x/ ranges from plain velar to glottal position. The allophones in velar position are released with a flow of air similar to aspiration with stops. On high register /x/ does not occur with high vowels.

	Low register		High register	
Vowel position	unrounded	rounded	unrounded	rounded
<i>High</i>	h	h	-	-
<i>Mid, low</i>	h ~ xh	h ~ ɤh	x	ɤ

Chart 8. Major allophones of /x/

/x/ [xh] voiceless, aspirated, released, plain velar fricative. Occurs with unrounded non-high vowels on low register. /xə̃/ [xhə̃⁸] <ແໜ້> 'classifier for doors'; /xě̃/ [xhě̃⁸] <ເໝ່> 'to leave vacant'.

[xh] voiceless, aspirated, released, backed velar fricative. Occurs with rounded non-high vowels on low register. /xò/ [xhò⁸] <ໜ່> 'to spread out'; /xá/ [xhà²] <ຂ້າ> 'to spill'.

[h] voiceless, glottal fricative. Occurs always with high vowels and fluctuates with [xh] or [xh] preceding mid and low vowels on low register. Fluctuation is strongest on low pitch. A pronunciation somewhat between [xh] and [h] is always accepted. /ʔáxu/ [ʔa²hu⁵] <ອ້າຊູ> 'the past'; /dǎxí/ [da³hi²] <ຕ້າຊີ> 'ceremonial bamboo knife'; /xóíò/ [xhó²io⁸] or [hó²io⁸] <ອ້ອຮ່ລ່> 'trough'; /xámə̃/ [xhə̃⁸mə̃⁵] or [hə̃⁸mə̃⁵] <ໝ່າມ> 'mouth'.

[ħ] voiceless, nasalised glottal fricative. Fluctuates with [h] or [xh] preceding nasalised vowel /ɔ̃n/ on low register. /míxò̃n/ [mí²xhò̃⁸] or [mí²hò̃⁸] or [mí²ħò̃⁸] <ຝັ່ງ> 'country'.

[M] voiceless, bilabial nasal. Fluctuates with [h] preceding syllabic [m] /ĩn/ on low register. /ʔáxĩn/ [ʔa³hm̥²] or [ʔa³M̥²] <ອ້າຊີມ> 'mushroom'.

[x] voiceless, unaspirated, plain velar fricative. Occurs with unrounded vowels on high register. /xə̃q/ [xə̃q⁷] <ແຍະ> 'to break'; /xě̃q/ [xě̃q⁷] <ເຍະ> 'to dig with finger'.

[x̥] voiceless, unaspirated, backed, velar fricative. Occurs with rounded vowels on high register. /xòq/ [xòq⁷] <ເຍະ> 'to draw water'; /baqxòq/ [bə̃q⁴xòq⁷] <ບື້ນໂຕ> 'skin'.

/g/ [g] voiced, fortis, velar fricative. Occurs with low register. /gò/ [gò⁸] <ໂຊ> 'to chew'; /gě̃/ [gě̃⁵] <ເຊ> 'to pull'.

[g] voiced, lenis, velar fricative. Occurs with high register. /gòq/ [gòq⁷] <ໂຊ> 'return'; /sə̃gòq/ [sə̃hə̃⁸gòq⁷] <ແສ້ເຊີ> 'temporary shelter'.

/ʔ/ [ʔ] glottal stop, similar to the Thai consonant /ʔ/ ๕. Occurs with both registers in syllable initial position. /ʔánĩq/ [ʔa²nĩq⁴] <ອ້າຊີ> 'seed'; /ʔùcòq/ [ʔu⁸çĩq⁷] <ອຸ່ຈ> 'evening'; /ʔàʔĩ/ [ʔa⁶ʔĩ⁸] <ອ່າຊີ> 'paternal uncle'; /yɔʔòq/ [yɔ⁵ʔòq⁷] <ຍ່ອຍ> 'to be ripe'.

[zero] occurs initially in syllables which are enclitic (aspect particles and grammatical markers). Enclitics always occur in phrase final position. In phonemic writing all enclitics are connected to the phrase to which they belong with a hyphen. Strings of enclitics are

There are some occurrences which contrast only by [ʔ] and [zero].
 /ʔáǰí ɣɔʔà/ [ʔa³ǰí²ɣɔ⁵ʔa⁸] <ဝိဇာဏ် ယဝဝံ> 'the bird is wet'; /ʔáǰí ɣɔ-ʔà/
 [ʔa³ǰí²ɣɔ⁵a⁸] <ဝိဇာဏ် ယဝ-ဝံ> 'the bird flew away'.

It may seem best not to write the glottal stop in syllables with smooth transition, thus making also the hyphen superfluous. This, however, would result in ambiguities because of technical reasons. In a combination like /dɔ̀nà/ one would not know the borders of syllables /dɔ̀n à/ or /dɔ̀ nà/, since nasality is written with a final consonant /-n/. Thus it is written as /dɔ̀n-ʔà/ [d͡ʑ⁵a⁸] <ดอ๑-อ่า> 'have time'. This solution also has a practical application in the Thai orthography for Akha.

In Akha phonological structure, stress operates primarily on the word level and is governed by the tonal system, whereas intonation and juncture operate primarily on a phrase level. All syllables have either weak or normal word-stress, governed by the tonal system. The nucleus of a phrase is accompanied by a phrase stress and other adjacent syllables have weak or normal stress.

In bisyllabic words which are generally nouns, the stress follows the tonal pattern. The syllable which has the higher phonemic tone carries the word-stress. This may be demonstrated in the following groups of examples.

A. Both syllables receive normal word-stress. On high and low tone, however, the stress of the first syllable may be slightly weaker than that of the second syllable. This is due to the different phonetic tones in sequences of syllables with the same phonemic tone, which has

been discussed under tone in this paper. /cákín/ <แฮ็คิม> 'unhusked rice'; /ɔabəq/ <งาเบะ> 'banana'; /xàgù/ <ท่าเงอ> 'charcoal'.

B. The first syllable receives normal word-stress and the second syllable receives weak stress. /míxòŋ/ <มีห้อง> 'country'; /ʔálu/ <อีลา> 'butterfly'; /dæxòŋ/ <แดห้อง> 'playground'.

C. The first syllable receives weak stress and the second syllable the normal word stress. /ʔàma/ <อามา> 'mother'; /micá/ <มีชัย> 'knife'; /lànqó/ <หละเน้ว> 'index finger'.

Words with more than two syllables follow the same pattern as bisyllabic words. The syllable which carries a higher phonemic tone than the other syllables in the word, receives the normal word-stress. Other syllables in the word have weak stress.

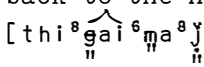
/'/ [phrase stress] accompanies the nucleus of a phrase. It is indicated by the symbol /'/ and is written after the syllable which carries the phrase stress. Other syllables in the phrase have weak or normal stress in accordance with the pattern of the word-stress which is governed by the tonal system. In a phrase with more than one nucleus the last nucleus in the sequence carries the phrase stress.

/màpágòqlé'-ʔa/ <หม่าฟ้าโงะเล'-อา> 'he is not going back again'. In the above phrase of five syllables /mà/ and /gòq/ as well as /-ʔa/ which is an enclitic aspect particle, carry weak stress. The syllable /pá/ has normal word-stress and the syllable /lé'/ as the nucleus of the phrase carries the phrase stress.

There are phrases which contrast only in phrase stress. In the first example below two nuclei represent two separate actions, whereas in the second phrase the nucleus represents a compound word. In phonemic writing the contrast may be shown by space.

/bi.jé.lá'-ʔə/ <บีเจิ้ล้า-เอ> 'to cause (someone) to come and sift'

/bi.jé'lá-ʔə/ <บีเจิ้ล้า-เอ> 'to cause (someone) to put (something) aside'

/"/ [emphatic stress] affects the nucleus of the phrase and is characterised by lengthening of the consonant or vowel, and results also in loss of tonal contrast. The inherent tone of the syllable in question rises to a steep peak which is higher than normal high pitch and falls back to the normal pitch of the following syllable. /tìgà"-ʔì màjós/ [thi⁸gai⁶ə⁸ʔw²] <ตีง่า-ชี หม่าจ้อ> 'not one single person is here!'.


Intonation affects the last syllable of a phrase or sentence. In most cases these syllables are enclitics. There are at least two distinct types of intonation.

/unmarked/ [emphatic pitch intonation] coincides closely with the three tonal pitch levels and occurs with syllables on low and high

register. The inherent tone of the syllable in question is extended by a superimposed intonational stress which is realised on mid and high tones as a slightly prolonged rising lift in pitch and a slightly prolonged lowering of the pitch on low tone. /ʔíkón-ʔón/ <อีต้อง-อึ้ง> 'in the house'; /yomí màsì/ <ยอหมื่อ หม่าสี่> 'don't know whether it's good or not'; /ʔàýòq ɣòqʔí-ʔónæ/ <อ่าเหยาะ โฎะอี-อึ้งแน> 'when he had left'; /ŋá-xòq ʔí-ma/ <ง้า-เขาะ อี-มา> 'I too will go'; /ɣòpàq jà-le/ <ฎ่อปะ หม่า-เล> 'eat vegetables!'; /ɣòqlé-de/ <โฎะเล-เต> 'go back!'.

/÷/ [falling intonation] affects the tones of syllables which occur on low register on phonemic mid and high tones. The inherent tone of the syllable in question is characterised by an emphasised drop in pitch which may be heard as a short falling tone. /ʔàjè jà-le÷/ <อ่าเหฒ หม่า-เล> 'what shall I eat?'; /ɣòqlé-made÷/ <โฎะเล-มาเต> 'I am going back!'; /xó-ná÷/ <เฮัว-น้า> 'then...'; /ʔàli-ʔó÷/ <อ่าลี-อ้อ> 'Son!'.

Juncture and intonation are closely inter-related in Akha, operating on a phrase level. Major phonological and syntactical divisions coincide in the structure of Akha. Significant divisions are marked on a syntactical basis by enclitics which occur in phrase final position. In this paper all enclitics are connected with a hyphen to the phrase with which they occur. Thus the hyphen indicates that the following syllable or syllables are enclitic and as such carry intonation. In a sequence of syllables which are enclitics, intonation occurs primarily on the last syllable, though the preceding syllables may also be slightly affected by intonation. The hyphen also indicates smooth transition between enclitic syllables with initial glottal stop. In a sequence of enclitics, though only the first is marked with a hyphen, syllables with initial glottal stop in the sequences of enclitics also have smooth transition. Syllables following the hyphen mark the end of phrases, clauses or sentences and thus the beginning of an important juncture.

There are at least four major types of juncture.

/unmarked/ [syllable juncture] indicates normal transition between syllables within words and phrases. /nĩma-ʔón/ <ณอมา-อึ้ง> 'in the heart'; /cósàýà/ <ฮ้อท่าหย่า> 'mankind'.

/space/ [phrase juncture] marks a short break or hesitation between phrases. /ʔàýòq-ʔón ɣokó-ʔá bíq'nà-ʔò/ <อ่าเหยาะ-อึ้ง ยอคือ-แอ อหน-อ่อ.> 'give it quickly to him'.

/,/ [clause juncture] is marked by a comma and indicates a pause which is a juncture of a slightly longer duration than the phrase juncture. /xóyě màbàq'cò-mínæ, páɣòqlá'-ʔónæ, ʔàcò-ʔón pásá'-ʔèmæ./ <ฮ้อเยอ

หม่าบะเข้า-มีแน, พ้าโงะล้า-อื้อแน, อ่าจ้อ-อื้อง พ้าข้า-เอ้อแม.> 'Because he could not carry the house posts, he came back and begged his friends to come.'

/./ [sentence juncture] is marked by a period and indicates a sentence final juncture. /ʔàda-ʔà ʔùcìqcìqʔí'-nàʔáʔ, ʔòqlé'-ʔëmà./ <อ่าดา-อ่า จู้จลลี้-หน้าอ้า, โงะเล-เออแน.> 'He, the father, when evening had come, he came back home.' /ʔàbʔ-ʔóʔ, jʔ-malóʔ./ <อ่าบ้อ-อ้อ, ม้อ-มาโล.> 'Grandfather! Are you home?'

"Northern" Akha

In learning Akha, and in earlier stages of my attempts to understand its sound system, I profited by the use of extensive word lists and considerable literature prepared in Pangwai, Burma, by Paul Lewis. This work, which is referred to in this paper as Northern Akha, is transcribed in a Roman letter writing system adapted from the conventions used in Lahu in the same area of Burma. Because of the importance of Lewis' work,¹ points of difference between the phonology of Northern and Southern Akha, and problems created by the respective writing systems are noted later. I will touch only on differences between his transcription of Akha and my analysis, indicating where they seem to be dialect problems and where they are due to other reasons.

It should be borne in mind that Lewis prepared his transcription in order to promote popular literacy among the Akha in Burma, just as our Thai-based transcription to be described below is prepared for that purpose in Thailand. The natural model for him to use was that of the existing Lahu transcription, which was the orthography of prestige among the Akha Christians with whom Lewis was working. A body of educated and motivated Akha Christians, who knew the Lahu script, were involved in its writing, in translation programmes, etc., and brought their Lahu-oriented judgments to bear on decisions. Furthermore, they represented a variety of dialects, and compromises had to be made.

This means that any discussion here of lack of "fit" at any points between Akha phonology and the Akha writing system used in Burma should be taken as simply reporting the facts, and not as implying that the "Northern" writing system should be different at these points.

The "Northern" orthography is represented in Charts 9-11.

¹It is Paul Lewis' analysis of Akha, for example, which Robbins Burling uses (1967). Extensive literature is available in Lewis' transcription, including a New Testament, and his dictionary (Lewis 1968b).

	Bilabial	Alveolar	Alveo- palatal	Velar	Glottal
Stop					
<i>voiceless</i>	p [p ^h p]	t [t ^h t]		k [k ^h k]	zero [ʔ]
<i>voiced</i>	b	d		g	
Affricate					
<i>voiceless</i>		ts [ts ^h ts]	c [c ^h c]		
<i>voiced</i>		dz	j [j j ^v]		
Fricative					
<i>voiceless</i>		s [s ^h s]	sh [ʃ ^h ʃ]	k' [x ^h x]	h
<i>voiced</i>		z	y	g' [ɣ]	
Nasal	m	n		ng [ŋ]	
Lateral		l			
Palatalised					
<i>voiceless</i>	py				
<i>voiced</i>	by				
<i>nasal</i>	my	ny			

Chart 9. "Northern" consonants in Akha romanised orthography developed by Lewis. First allophone occurs with low register and second allophone with high register. Compare Chart 5.

A comparison of Chart 9 with Chart 5 will quickly show that Northern Akha has more consonants than Southern Akha. From Lewis' reports in personal communication this is unquestionably true.

Northern /ts c/ are together equivalent to Southern /c/. The contrast in Northern <tsaw[^]-eu> 'to pierce, stab', and <caw[^]-eu> 'to be ruined, destroyed', are realised in Southern Akha as /cɔq-ʔě/ <ເຈົ້າ-ເອ> 'to stab, pierce'; /cɔqʔí-ʔě/ <ເຈົ້າ-ເອ> 'for something to go bad, to be ruined'. The pronunciation of the consonant /c/ in Southern Akha is in both words [ç], and fluctuates with [ç̥] and [ç̣] in the speech of one and the same person. The contrast in Northern <tsaw_v> 'waterfall', and <caw_v> 'a friend', are both /cɔ̃/ in Southern Akha with a pronunciation which is usually [ç̥h], but fluctuates with phonetic values of [ç̥h] and [çh]. The word for 'friend' is usually understood by the context.

/ŋà-ʔě cò/ <หัง-เออ ค้อ> 'my friend'; /cò tìgà/ <ค้อ ตัก> 'one friend' (lit. *friend-one-person*). The word 'waterfall' is usually bisyllabic /còtòq/ <ค้อต> 'waterfall', unless it is understood otherwise by the context. The two words may be heard as monosyllabic words, thus occurring as homonyms. However, here again the context would make the meaning clear as can be seen from the following example. /cò màbɔ/ <ค้อ หม่าบ> 'there is no friend'; /cò màjaq/ <ค้อ หม่าจ> 'there is no waterfall (inanimate)'.

Northern /dz j/ are equivalent to Southern /j/. The contrast in Northern <dza_v-eu> 'to eat', and <ja_v-eu> 'to call an animal', are both to be found in Southern Akha with pronunciations ranging between [j] and [ɟ]. Different pronunciations may be heard with one and the same speaker. The word for 'to call an animal', however, is used with a post-verbal /-xòq/ as a bound form. Northern <a_v kui_v dza_v-eu> 'to eat the dog', and <a_v kui_v ja_v-eu> 'to call the dog'. Southern /ʔàkɿ jà-ʔě/ <อ่าค้อ หม่า-เออ> 'to eat the dog', and /ʔàkɿ jàxòq-ʔě/ <อ่าค้อ หม่าจ-เออ> 'to call the dog back'.

Northern /s sh/ are equivalent to Southern /s/. The contrast in Northern <shm^v> 'iron', and <sm^v> 'three', are to be found in Southern Akha as /sɿn/ with pronunciations for both words ranging between [ʃh] and [ɬh], which can be heard in fluctuation with one and the same speaker. The word for 'three legs', which would be expected to contrast with the compound noun for 'a tripod, cooking stand' (lit. *iron-leg*), is, however, changed by morphophonemic alternation to /sɿn/ 'three', on low tone. Northern <shm^v kui^v> equals Southern /sɿnkɿ/ <ชิมค้อ> 'cooking stand'. Northern <sm_v kui^v> equals Southern /sɿnkɿ/ <ลิ้มค้อ> 'three legs'.

Northern /z y/ are equivalent to Southern /y/. The Northern contrast <za_v-eu> 'to hide', and <ya_v-eu> 'to camp overnight', are realised in Southern as /cəqyàq-ʔě/ <ฉะหยะ-เออ> 'to hide' (lit. *run-hide*), and /jɔyàq-ʔě/ <ฉ้อยยะ-เออ> 'to camp' (lit. *stay-camp*). The Northern contrast <za_v> 'child', and <ya_v> 'wild goat', occurs in Southern as /yà/ <หย่า> or /bɔcɔnyà/ <บ้อค้องหย่า> 'wild goat', the latter meaning lit. 'jungle-wild-goat'. The word for 'child' is usually a compound word /yàdě/ <หย่าเตอ> 'children', or is made otherwise clear through the context as in /ŋà-ʔě yà/ <หัง-เออ หย่า> 'my child'.

Northern /k' h/ are equivalent to Southern /x/. In Northern Akha /k'/ [xh] does not occur with high vowels. /h/ occurs only on low register with oral vowels, but occurs with high vowels. In southern Akha there is fluctuation between the phonetic values [xh], [ɣh] and [h], as described earlier in the paper. The Akha in this area, even the older generation, simply cannot hear the differences between these allophones. A pronunciation somewhere between these allophones is

always accepted by the Akha. Northern <k'aw_v> 'a section of bamboo beaten after successful hunting', contrasts with <haw_v> 'cooked rice'. In Southern Akha /xò/ <ห่อ> 'cooked rice', is frequently pronounced as [hɔ̃⁸], sometimes as [xhɔ̃⁸], but is usually pronounced somewhere between the two phonetic values. The word for 'a bamboo section beaten...' has become a bisyllabic word in Southern Akha, /xòd\ / <ห่อตี>, the initial consonant having the same allophonic pronunciations as in the word for 'cooked rice'.

Lewis has pointed out that on several occasions he has met Akhas particularly from western and southern parts of Kengtung state who seemed to have a great deal of fluctuation between these five pairs of Northern consonant phonemes. This would suggest that there are geographical boundaries of dialects with a more expanded phonemic system in the Northern areas of Akha dispersion and a reduced phonemic system in Southern and Western areas. More recently I had contact with Akhas in Muong Mugne in Northern Laos, who had just arrived from the Muong Sing area on the China Border. Their speech pattern reflected very much that of "Northern" Akha as described by Lewis, though even there different speakers showed different pronunciations with the five consonant pairs of Northern Akha /ts c/, /dz j/, /s sh/, /z y/ and /k' h/.

	Front		Central	Back	
	<i>unrounded</i>	<i>rounded</i>		<i>unrounded</i>	<i>rounded</i>
High	i	ü <oi>		ĩ <ui>	u
Higher-mid	e	ö <oe>		ë <eu>	o
Lower-mid	ɛ <eh>		a		ɔ <aw>
Low	-m			ɔ̃ <ah>	

Chart 10. Northern vowels. Compare Chart 3.

Lewis lists the vowel /e/ as not occurring with laryngealised quality and mentions one occurrence as an exception <bi_hle_h-eu> 'to give (down)'. However, in Southern Akha, /lèq-ʔë/ <ເລ-ເຈ> 'come down (towards speaker)' occurs usually as a bound form in a number of compound words as in /jólèq-ʔë/ <ລ້ອ-ເລ-ເຈ> 'come down to live'. Another common word is /ʔábyèq/ <ຈ້າ-ເຍး> 'bamboo shoots', which Lewis also lists in his dictionary.

Paul Lewis has also recorded laryngealised occurrences with syllabic /-m/, all in syllables following the nasal /n/. He also records a contrast between oral and laryngealised vowel quality occurring with

syllabic /-m/, Northern <ɪ^hnm_h> 'brain' and <ɪ^hnm_v> 'a type of tree'. In Southern Akha the word for 'brain' does occur with a high register vowel quality /ʔɪn^hɪqɪn/ <ໂຮ່ນິມ້>, whereas the particular type of tree seems to be unknown. The only contrast found in Southern Akha is /yɔn^hɪn/ <ຍອຸນິມ> 'mildew'; /yɔn^hɪqɪn/ <ຍອຸນິມ້> 'powder'.

Lewis lists three diphthongs. Northern /ao/ and /aɪ/ occur in Southern Akha in very much the same way, except that they do not occur with a high register vowel quality. /xàw/ [x^hha⁰⁸] <ເທ່າ> 'black fungus developing on wood'; /bày/ [ɸa¹²] <ໂວ້> 'paper money'.

Northern diphthong /am/ as a sequence of /a/ and syllabic /-m/ occur also in Southern Akha. Lewis, however, lists occurrences of the diphthong /am/, which in Southern Akha are the result of morpho-phonemic fusion of syllables. In Southern Akha the bound morpheme /-x^hɪn/ 'lawful, according to custom', may fuse with the preceding syllable which must occur with the vowel /a/ on low pitch. In the process of fusion the vowel /a/ of the preceding syllable is retained, whereas the consonant /x/ of the bound syllable /-x^hɪn/ is lost and the syllabic [m] becomes the final consonant /m/ of the fused syllable. Northern <dam_v-eu> 'to give something as an offering', is realised in Southern Akha as /dàx^hɪn-ʔě/ [da⁶hm⁸ě⁵] or [dam⁸ě⁵] <ດ່າຮິມ-ເອ> 'to make an offering according to law', which is comprised of the verb nuclei /dà/ <ດ່າ> 'to offer' (Northern <da_v-eu> 'to offer something'), followed by the bound form /-x^hɪn/ <-ຮິມ> 'according to law'. This morphophonemic fusion of syllables facilitates the easy absorption of loan words as realised in the nasality sequence /-an/ of the vowel /a/ followed by the consonant /m/, which is discussed earlier.

	Low register	High register
High tone	ba ^v	
Mid tone	ba	ba [^]
Low tone	ba _v	ba _h

Chart 11. Northern tones and register

In Northern phonemic system, high tone on high register is not recorded. It is apparently even rarer in Northern Akha than in Southern (Lewis 1973), and the Lahu system for representing tones on which the Akha orthography was based does not lend itself to writing a sixth tone. The lack of such a symbol presents no practical difficulties. In Southern Akha there are a number of occurrences on high register with high tone apart from those mentioned above; their total number is

probably not more than a dozen. Northern <jaw^ˈ ba^ˈ ba^ˈ-eu> '*for a person to boss others around*', occurs in Southern as /jɔ́báqbáq-ʔě/ <จ๋อบ๊ะบ๊ะ-เออ> '*to boss others around*'. Northern <dzaw^ˈ-eu> '*to be worthy*', corresponds to Southern /jɔ́qlé-ʔě/ <ເຈ້າະເລ້-เออ> '*worthy, according to, fitting as colours, etc.*'.

Northern Akha is written monosyllabically. This results in countless ambiguities leaving a speaker of the Southern Akha who is reading the Romanised Script based on Northern Akha guessing about what syllables belong together. After finding out the right meaning of an utterance, he would repeat himself, putting stress and intonation in its proper places. The following example may show the extent of ambiguities, as seen from the standpoint of the southern reader. In the sequence of four syllables five different meanings may be understood. Northern <ga^ˈ ma sa_ˌ pa^ˈ> may be understood as <ga^ˈ> '*classifier for place*' (also a syntactical marker), <ga^ˈ ma> '*path*', <ma sa_ˌ> '*common kind of bamboo*', <sa_ˌ pa^ˈ> '*cloth*', <pa^ˈ> '*again*' (pre-verbal). The following sentence would be extremely difficult to understand for a reader of Southern Akha. Northern <ya^ˈ m^ˈ-eu ga^ˈ ma sa_ˌ pa^ˈ ja^ˈ-eu> could have two entirely different meanings. Southern /yá ʔín-ʔě gáma sàpá jaq-ʔě/ <ย៉ါ อီမ်-เออ พ้ามา ล้าฟ้า ณะ-เออ> '*there is a cloth on the path to the fields*' (lit. *field-making-path cloth is*). Southern /yá ʔín-ʔě gá, masà pájaq-ʔě/ <ย៉ါ อီမ်-เออ พ้า, มาล้า ฟ้าณะ-เออ> '*there is bamboo again in the field*' (lit. *field-make-place bamboo again has*). The following phrase shows again the extent of ambiguities, Northern <nga_ˌ-eu ga^ˈ ma> which could be read in Southern as <ngà-ʔě gáma> <หง่า-เออ พ้ามา> '*my path*', or as <ngà-ʔě gá-ma> <หง่า-เออ พ้า-มา> '*my affair*'.

Further differences between Northern Akha as described by Paul Lewis and Southern Akha as spoken in Thailand, as well as further features of Akha phonology, have been pointed out by David Dellinger (1968, 1969, 1972; Dellinger and Wyss 1969).

ORTHOGRAPHY

In adapting Thai script to Akha two main principles were taken into consideration. 1. It is essential to retain a maximum of transfer value from the script for Akha to the actual writing of Thai, keeping at the same time to simplicity as far as possible. 2. It is essential to avoid if possible any introduction of symbols and combinations which go against the Thai writing system, or create typing and printing problems. The practical implications of these principles are discussed below.

Consonants

The following list shows the Thai consonants with their phonetic values and class distinction, and how they are used in writing Akha. If their use is restricted in pitch or register it will be mentioned. Otherwise their function is like that of Thai. Under problems of phonetic correspondence the symbol + indicates that the particular consonant has non-phonemic variations in Akha of which some are slightly different from the Thai value. The symbol * indicates that the consonant as used in Akha has a completely different phonetic value from its use in Thai, because the sound does not exist in Thai. Since Akha register is indicated by two different sets of Thai vowels, short and long, certain consonant symbols occur only with short or long vowels respectively. M = middle class consonant in the Thai orthographic classes of consonant. H = high class consonant; L = low class consonant.

Thai symbol	Class	Thai value	Problems in phonetic correspondence	Akha value phonemic	Akha value phonetic
ก	M	/k/		/k/	[k] high register
ข	H	/kh/		/k/ low pitch	[kh]
ค	L	/kh/		/k/ mid+high pitch	[kh]
ฅ	L	/kh/	*	/g/	[g]
ฌ	L	/ŋ/		/ŋ/	[ŋ]
ฉ	M	/c/	+	/c/	[c~č] high register
ช	H	/ch/	+	/c/ low pitch	[ch~čh] low register
ฌ	L	/ch/	+	/c/ mid+high pitch	[ch~čh] low register
ซ	L	/s/	+	/s/ mid+high pitch	[s~šh]
ฌ	L	/ch/	*	/j/	[dʲ~j]
ญ	L	/y/(ñ)	+	/ñ/	[ñ]
ฎ	M	/d/	*	/g/	[g]
ด	M	/d/		/d/	[d]
ต	M	/t/		/t/	[t] high register
ถ	H	/th/		/t/ low pitch	[th] low register
ท	L	/th/		/t/ mid+high pitch	[th] low register
น	L	/n/		/n/	[n]
บ	M	/b/		/b/	[b]
ป	M	/p/		/p/	[p] high register
ผ	H	/ph/		/p/ low pitch	[ph] low register
พ	L	/ph/		/p/ mid+high pitch	[ph] low register
ม	L	/m/		/m/	[m]
ย	L	/y/	+	/y/	[z~y]
ร	L	/l/		/l/	[l]

Thai symbol	Class	Thai value	Problems in phonetic correspondence	Akha value phonemic	Akha value phonetic
ส	H	/s/	+	/s/ low pitch	[s~ʂh]
ห	H	/h/	+	/x/ low pitch	[xh~h] low register
อ	M	/ʔ/		/ʔ/ (initial)	[ʔ]
ฮ	L	/h/	+	/x/ mid+high pitch	[xh~h] low register

	Bilabial	Labio-palatal	Alveolar	Palatal	Velar	Glottal
Stops						
<i>unaspirated</i>	[p]	[pʏ]	[t]	[c ~ ɕ]	[k]	
	ป	ปย	ต	จ	ก	
<i>voiceless</i>	/p/	/py/	/t/	/c/	/k/	/ʔ/
<i>aspirated</i>	[ph]	[phʏ]	[th]	[ch ~ ɕh]	[kh]	[ʔ]
	พ/ผ	พย/ผย	ท/ถ	ช/ฉ	ค/ข	อ
<i>voiced</i>	/b/	/by/	/d/	/j/	/g/	
	[b]	[bʏ]	[d]	[dʏ ~ ɟ]	[g]	
	บ	บย	ด	(ต/หม)	(ง/หม)	
Nasals	/m/	/my/	/n/	/ɲ/	/ŋ/	
	[m]	[mʏ]	[n]	[ɲ]	[ŋ]	
	ม/หม	มย/หมย	น/หน	ญ/หญ	ง/หง	
Fricatives						
<i>voiceless</i>				/s/	/x/	
				[s ~ ʂh]	[xh ~ h]	
				ซ/ส	ฮ/ห	
<i>voiced</i>			/l/	/ɣ/	/g/	
			[l]	[z ~ y]	[g]	
			ล/หล	ย/หย	(ฎ)	

Chart 12. Orthography for consonants. Parentheses indicate Thai symbols which are used in Akha for values very different from their Thai values. Symbols before the / are used on mid and high pitch and those after on low pitch.

Chart 12 likewise shows the full inventory of Akha consonant phonemes with their respective Thai symbols and major phonetic values.

The set of unaspirated voiceless stops <๖ ๗๘ ๙ ๐> which are variations of the phonemes /p py t c k/ respectively, is introduced in order to retain as much transfer value as possible. Consequently this set of Thai symbols occurs only with short vowel symbols in Akha, because their phonetic value is that of high register consonants. Thus with the voiceless stops high register is indicated by short vowels as well as the unaspirated consonant, which is redundant.

The consonants in labio-palatal position are written as graphic clusters <๖๗ ๗๘ ๗๙ ๘๐ ๘๑ ๘๒>. Though this cluster is absent in Thai, other clusters such as <๗๘> do occur there.

The set of consonants in palatal position, because they include a wide range of allophones, create some difficulty in writing Akha with Thai letters. The use of <๑> has been discussed above. It occurs only with short vowel symbols on high register. The phonetic value of Akha [c] does not occur in Thai. The symbols <๒/๑> are used in Akha to cover phonetic values from [ch] which does not occur in Thai to [čh] which is close to the value of these symbols in Thai. These consonant symbols occur with Thai long vowels on low register only. <๓> Thai /ch/ is used for /j/ in Akha. In both languages they represent an affricated stop in palatal position, differing only in voiceless and voiced articulation. In Akha the phonetic value ranges from [dʲ] with Thai short vowel symbols on high register to [j] and [j̥] with Thai long vowel symbols on low register. In Thai <๓> occurs only in a very few words, and no occurrence with a preceding <๗> to indicate low or rising tone with low class consonants is recorded. In writing Akha, however, this new combination <๗๓> is necessary to indicate low tone on both registers, i.e. with long and short vowels. The symbol <๔> which in Thai is /y/, but pronounced in Northern Thai as [ñ], commends itself in writing /ñ/ in Akha. <๒/๔> are used to write Akha /s/, which has again a number of slight variations ranging from [s] which is the value of these two symbols in Thai, to [šh] which though similar is not part of Thai phonology. The symbol <๕> is used to indicate the phoneme /y/ in Akha. Although [z] can sporadically be heard, the main allophone is [y] which is very similar to the Thai value of <๕>.

In velar position Thai <๖> creates no problem in writing /ŋ/ in Akha. Thai, however, does not have a voiced velar stop. <๗> Thai /kh/ is used for Akha /g/. In Thai this symbol has no occurrence with a preceding <๗> to indicate low or rising tone. In Akha the combination <๗๗> is introduced to write low tone on both registers. <๘> Thai /d/ is arbitrarily used for /g/ in Akha. This symbol is rare in Thai thus should not create serious problems to an Akha learning Thai. There is no Akha /gu/, which would present problems in printing, with the tail

of the consonant going below the line and otherwise interfering with the placement of the Thai symbol for /u/.

Symbolisation for the voiceless phonemes /k/ and /x/ creates some problems. To retain as much transfer value as possible, Northern Thai, of which many Akha have a good conversational knowledge, was taken into consideration too. Chart 13 shows the five Thai symbols which in one way or another reflect the phonetic values of Akha /k/ and /x/, in either Thai or Northern Thai, and indicate how they are used for Akha orthography.

Thai symbols	Thai phonetic value	Northern Thai phonetic value	Phonetic values and orthography of Akha consonant phonemes			
			/k/		/x/	
			low reg.	high reg.	low reg.	high reg.
ก	k	k		k <ก>		
ค/ข	kh	x	kh <ค/ข>			ข x <ค/ข>
ฮ/ห	h	h			xh h <ฮ/ห>	.

Chart 13. Symbols for Akha /k x/

Thai <ก> /k/ reflects the Akha allophone [k] of the phoneme /k/ on high register. Thai <ค/ข> with phonetic value [kh] are very much the same as the Akha allophone [kh] of the phoneme /k/ occurring with low register. In Northern Thai, Thai words written with <ค/ข> symbols are pronounced with a phonetic value close to a velar fricative, which is very similar to the Akha allophones [x] and [x̥] of the phoneme /x/ on high register. Thus <ค/ข> are both used in Akha for two different phonemes. This is only possible because Akha /k/ on high register is written with <ก>. Thus <ค/ข> written with Thai long vowel symbols represent Akha /k/ on low register and if written with Thai short vowel symbols represent the Akha /x/ on high register. There are no ambiguities as a result of this choice of symbolisation. For the Akha velar fricative /x/ on low register, which has variations ranging from phonetic value [xh] to [h] in glottal position, <ฮ/ห>, Thai [h], have been chosen to retain transfer value. Their use for Akha /x/ on high register would not have any transfer value, since the allophone [h] of the phoneme /x/

in Akha never occurs on high register.¹

/k/	/ka-ʔë/	[kha ⁵ ë ⁵]	<คา-เออ>	'to plant'
	/kaq-ʔë/	[kq ⁴ ë ⁵]	<ก๊ะ-เออ>	'to rake'
	/kà-ʔë/	[kha ⁸ ë ⁵]	<กา-เออ>	'to cover'
	/kàq-ʔë/	[kq ⁷ ë ⁵]	<กะ-เออ>	'to tie'
/x/	/xɔ-ʔë/	[hɔ ⁵ ë ⁵]	<ฮอ-เออ>	'to look'
	/xɔqlá-ʔë/	[xɔ ⁴ la ² ë ⁵]	<เคาะล้า-เออ>	'to grow old'
	/xò-ʔë/	[xhɔ ⁸ ë ⁵]	<ห่อ-เออ>	'to spread out'
	/xòq-ʔë/	[xɔ ⁷ ë ⁵]	<เขาะ-เออ>	'to draw water'

Vowels

The writing of Akha vowels with Thai symbols creates no serious problems (Chart 14).

	Front		Central	Back	
	unrounded	rounded		unrounded	rounded
High	i = / ๕	ü = ๗ /		ĩ ๕๐ / ๕	u ๗ / ๗
Mid	e เ- / เ-ะ	ö เ-๗ / เ-๗ะ		ë เ-๐ / เ-๐ะ	o โ- / โ-ะ
Low	æ แ- / แ-ะ		a -๗ / -ะ		ɔ -๐ / -๐ะ
Glided		ay [a ⁱ] ๗-		aw [a ^o] เ-๗	
Nasalised	ĩn [m̃] ๕๗ / ๕๗		an [am] -๗		ɔn [ɔ̃] -๐๗

Chart 14. Thai symbols for Akha vowels. Symbols before the / are used with Akha low register and those after with Akha high register.

¹Choosing <ค/ข> to write Akha /x/ on high register will also facilitate recognition for readers of a dialect as represented by my informant /búðò/ <บูโด>, since these two symbols have the phonetic value of the aspirated velar stop. In her speech all words
(continued on page 179)

The simple front unrounded and the back rounded vowels in Akha correspond closely to those in Thai, and thus create no problems in writing them with their respective Thai symbols. The only central vowel /a/ in Akha is slightly lower than its Thai counterpart /a/ <๑>. The mid back unrounded /ɤ/ in Akha, though close to the Thai central /ə/ <๑>, is considerably more back. The high unrounded /ɨ/ in Akha is a distinctly back vowel, clearly higher than the Thai central /ɨ/ <๑> and has the particular feature of a tightened faucal apparatus described above.

The two rounded vowels /ü ö/ have no counterparts in Thai. For the high vowel /ü/ the Thai combination <๑> is used. Its phonetic value in Thai is [iu], which does not exist in Akha. <๑> is a short vowel form in Thai, and therefore would normally be used with Akha high register on the analogy of all the other vowels. Since the vowel /ü/ is rare and no occurrence on high register is recorded so far, we have decided to use the short form to indicate low register vowel quality.

Like /ɤ/, Akha /ö/ is close to Thai /ə/ <๑>, but the two are in clear contrast. /yɔdɔ̌/ [yɔ⁵dɔ̌²] <ຍອເຕົາ> 'to be lazy'; /yɔdɔ̌/ [yɔ⁵dɔ̌²] <ຍອເຕົາ> 'to be diligent'. The Thai combination <๑> (Thai /ew/) is used for /ö/ in corresponding fashion to the above /ü/. However, <๑> is a long vowel form, and a short vowel form is needed in Akha to write high register on all three phonemic tones. The existing short form in Thai occurs only on Thai mid tone and is written <๑>. This combination, however, creates problems in the placement of tone marks in printing. Therefore a short vowel form <๑> is introduced for Akha which although non-existent in Thai, follows nevertheless the Thai pattern of writing many short vowel forms.

All simple vowels in Akha are relatively short compared with Thai vowels. Vowels on high register in Akha are shorter than a short vowel in Thai and vowels on low register are shorter than long vowels in Thai. The features of high register vowels in Akha are not present with Thai short vowels.

The two rarely used glided vowels in Akha are written with <๑> for /ay/, and <๑> for /aw/, which are close to the phonetic values of their Thai counterparts. So far occurrences are recorded only on low register.

(continued from previous page)

which occur with other informants as /x/ on high register are consistently changed to /k/ on high register. The following examples show the contrast between /k/ and /x/ on high register. /ʔáɬ kòq-ʔɛ̌/ <ອ້າລ໌ ເກະ-ເອ> 'the snake bites'; /ʔícuq xòq-ʔɛ̌/ <ອີລຸ ເກະ-ເອ> 'to draw water'. The two contrasts above, according to this informant's speech, would be written as follows, the second example changing to a compound verb to thus eliminate ambiguity. /ʔáɬ kòq-ʔɛ̌/ <ອ້າລ໌ ເກະ-ເອ> 'the snake bites'; /ʔícuq kòqʔí-ʔɛ̌/ <ອີລຸ ເກະອີ-ເອ> 'to go and draw water'.

Nasality in its three forms is indicated with final nasal consonants. /-ĩn/ the syllabic [ṁ] is written as <ṁ>, which resembles very closely its phonetic value in Akha. Since syllabic [ṁ] is always acoustically short, the short vowel form <ṁ> is used to indicate low as well as high register vowel quality. Only a few occurrences on high register are recorded and only one is in identical contrast. If necessary this contrast may be shown by some other convention such as adding <ṁ̃> to the syllable with high register faucalised vowel quality. /-an/ is written with the Thai symbol <ṁ̃> /am/, and corresponds very closely to the phonetic value in Akha of the sequence /a/ followed by a final nasal /m/. /-ɔn/ the nasalised vowel [ɔ̃] which may sporadically be heard as a final /ŋ/ is written with the Thai symbols <ṁ̃>. This nasalised vowel occurs only on low register; thus no short vowel form is needed.

Tone

Pitch	Akha tones	Thai level tones		Akha tones
	<i>low register</i>	<i>long vowels</i>	<i>short vowels</i>	<i>high register</i>
High				
Mid				
Low				

Chart 15. Comparison of Akha and Thai level tones

Chart 15 shows the similarity between Akha tones on low register and Thai level tones occurring with long vowels. The particular feature of breathiness which is very distinct on low pitch in Akha does not occur with the Thai level tone on low pitch. The special contour features in Thai on mid and high level tones do not correspond with those of Akha on low register. Generally Akha tones on low register are shorter than

Thai level tones occurring with long vowels. Akha high register tones are considerably shorter and more abrupt than Thai level tones occurring with short vowels. In addition Akha tones on high register occur in finally open syllables, whereas in Thai, level tones with short vowels end with an unreleased stop on low and high pitch, and those on mid pitch are found in closed syllables ending phonetically with a nasal consonant or a glided vowel.

The writing of Akha tones using Thai symbols is shown in Chart 16 below. With Akha having neither rising nor falling tones, but only three relatively level pitches which are similar to the level tones in Thai, writing these tones in the Thai system creates no major problems using long vowel symbols on low register.

	Low register <i>Thai long vowel symbols</i>			High register <i>Thai short vowel symbols</i>		
	MCC	H/LCC	LCC HCC	MCC	H/LCC	LCC HCC
High tone / ' /	บื๑	จ๑	ค๑	บ๑	จ๑	ค๑
Mid tone / /	บ๑	จ๑	ค๑	บ๑	จ๑	ค๑
Low tone / ` /	บ๑	หจ๑	ข๑	บ๑	หจ๑	ข๑

Chart 16. Transcription of register and tone. MCC = middle class consonant; H/LCC = low class consonant which does not come in a pair with a high class consonant, but which may occur in a digraph with <๑-> to follow high class rules; LCC HCC = low class and high class consonants in pairs.

The use of Thai short vowel symbols to indicate Akha high register is not quite so convenient. As mentioned above, Thai has short vowel symbols for syllables with final stop on low and high pitch only. In writing Akha, however, short vowel symbols are needed for open syllables on all three pitches. Since in Akha high pitch on high register is fairly rare, but mid pitch on high register very frequent, the symbols used in Thai to indicate high pitch are used in Akha to write mid pitch. For the rare high pitch, the new combination <๑-๑>, which does not occur in Thai, is introduced. Thai tone-marks are used as shown in Chart 17.

	Low register with Thai long vowel symbols				High register with Thai short vowel symbols		
	unmarked	ˊ	ˋ	ˊˊ	unmarked	ˋ	ˊˊ
MCC	<i>mid</i>	<i>low</i>	-	<i>high</i>	<i>low</i>	<i>high</i>	<i>mid</i>
HCC	-	<i>low</i>	-	-	<i>low</i>	-	-
LCC	<i>mid</i>	-	<i>high</i>	-	<i>mid</i>	<i>high</i>	-

Chart 17. Use of Thai tone marks in representing Akha register and tone.

Charts 18-20 show the theoretically possible vowel and tone combinations with the three classes of Thai consonants. The combinations of high pitch on high register have not been recorded in any data yet, so are shown in parentheses.

		Low register			High register		
		/ˊ/	/ /	/ˊˊ/	/ˊq/	/ q/	/ˊˊq/
MCC	/i/	ชี้	ช	ชี้	ฉิ	ฉี	(ชี้)
	/e/	เอ	เ	เอ	เะ	เียะ	(เอะ)
	/æ/	แ	แ	แ	แะ	แียะ	(แะ)
	/ü/	อึ	อ	อึ	-	-	-
	/ö/	เอว	เ	เอว	เะ	เียะ	(เอะ)
	/a/	อา	า	อา	อะ	ียะ	ยะ
	/ɨ/	อ	อ	อ	อ	อ	(อ)
	/ə/	เออ	เ	เออ	เะ	เียะ	เอะ
	/u/	อุ	ู	อุ	อุ	ุ	(อุ)
	/o/	โ	โ	โ	โะ	โียะ	(โะ)
	/ɔ/	อ	อ	อ	เะ	เียะ	เียะ
	/-ɪn/	อึ	อ	อึ	-	-	-
	/-an/	อา	า	อา	-	-	-

Chart 18 continued on page 183

		/`/	/ /	/’/	/`q/	/ q/	/’q/
MCC	/-ɔn/	บ๋อง	บอง	บ๊อง	-	-	-
	/ay/	บาย	บาย	บาย	-	-	-
	/aw/	บ่า	บ่า	บ๊า	-	-	-

Chart 18. Middle class consonants, with all combinations of vowel and tone. They include <อ บ ต ฏ> on both registers, and <ป ต จ> only on high register.

		Low register			High register		
		/`/	/ /	/’/	/`q/	/ q/	/’q/
HCC	/i/	ลี้	ลี	ลั๊	ลี้	ลี	(ลั๊)
LCC	/e/	ล่	เล	ลั	ล่ะ	เละ	(ลั)
	/æ/	ล่	แล	ลั	ล่ะ	และ	(ลั)
	/ü/	ลิว	ลีว	ลั้ว	-	-	-
	/ö/	ลั่ว	เลว	ลั้ว	ลั่วะ	เลวะ	(ลั้วะ)
	/a/	ล่า	ลา	ลั	ล่ะ	เละ	ลั
	/ĩ/	ลื่อ	ลีอ	ลั๊	ลี้	ลี	(ลั๊)
	/ë/	ลื่อ	เลอ	ลั	ล่ะ	เละ	ลั
	/u/	ลู	ลุ	ลั	ลู	ลุ	(ลั)
	/o/	โล	ลอ	ลั	ล่ะ	เละ	(ลั)
	/ɔ/	ล่อ	ลอ	ลั	ล่ะ	เละ	ลั
	/-ĩn/	ลัม	ลัม	ลัม	-	-	-
	/-an/	ล้า	ลา	ลั	-	-	-
	/-ɔn/	ล่อง	ลอง	ลั	-	-	-
	/ay/	ล่าย	ลาย	ลั	-	-	-
	/aw/	ล่าว	ลาว	ลั	-	-	-

Chart 19. High and low class consonants, which come in pairs, with all combinations of vowels and tones. In this category <ล/ล ษ/ษ> occur on both registers, whereas <ผ/ผ ฝ/ฝ ฎ/ฎ ฐ/ฐ ฑ/ฑ ฒ/ฒ ฌ/ฌ ญ/ญ> occur only on low register.

		Low register			High register		
		/`/	/ /	/’/	/`q/	/ q/	/’q/
H/LCC	/i/	หฺลื	ลื	ลื	หฺลื	ลื	(ลื)
	/e/	หฺลื	เล	ลื	หฺลื	เล	(ลื)
	/æ/	หฺลื	แล	ลื	หฺลื	แล	(ลื)
	/ü/	หฺลื	ลื	ลื	-	-	-
	/ö/	หฺลื	เล	ลื	หฺลื	เล	(ลื)
	/a/	หฺลื	ลา	ลื	หฺลื	ลา	ลื
	/ĩ/	หฺลื	ลื	ลื	หฺลื	ลื	(ลื)
	/ë/	หฺลื	เล	ลื	หฺลื	เล	ลื
	/u/	หฺลื	ลู	ลื	หฺลื	ลู	(ลื)
	/o/	หฺลื	โล	ลื	หฺลื	โล	(ลื)
	/ɔ/	หฺลื	ลอ	ลื	หฺลื	ลอ	ลื
	/-ĩn/	หฺลื	ลื	ลื	หฺลื	ลื	(ลื)
	/-an/	หฺลื	ลา	ลื	-	-	-
	/-ɔn/	หฺลื	ลอ	ลื	-	-	-
	/ay/	หฺลื	โล	ลื	-	-	-
	/aw/	หฺลื	เล	ลื	-	-	-

Chart 20. Low class consonants, which do not occur in pairs with high class consonants, but which are prefixed with <ห-> to indicate high class. This includes the consonants <พ ง ฉ ญ น ม ล ย>, all of which occur on both registers.

In this Thai based orthography for Akha, word-stress which is governed by the tonal system need not be indicated, since space marks the phrase juncture and thus polysyllabic words are written together. Where ambiguities may occur the phrase-stress is indicated by space. Emphatic stress, emphatic pitch intonation as well as the falling intonation are adequately handled by tone, aspect particles or grammatical markers, and the context. The clause juncture is marked by a comma and the sentence juncture by a period. The hyphen is used to connect enclitics to the phrases with which they occur.

Use

Half a dozen Akha in Thailand can read the romanised script developed by Lewis and widely used in Burma. Some twenty Akha of different age groups have worked through a set of four primers in the Kayeh /káyà/ <คำหญ่> and the Doi Chang areas. /ʔásq/ <อาเชะ>, a fifteen year old Akha lad from Saen Chai village who went to a Thai school in Chiangrai, has used this orthography in transcribing Akha text materials as an assistant to David Dellinger.

Apart from the four primers mentioned above, a reader on hygiene and gardening has been mimeographed, and will be followed shortly by another reader on health and farming. In addition, a hymnbook and smaller portions of the Bible have been printed or mimeographed.

Sample text

The following short text is the beginning of a taped and transcribed Akha fable as recorded by /ʔàgò/ <อาห่อ> of Kayeh New Village. The lines show phonemic writing, Thai script, literal translation and a free translation. The abbreviation A stands for enclitics which are aspect particles of the verb phrase, and indicate very subtle degrees of certainty or doubt. Grammatical markers are indicated in the text with a capital M, and their function may be described as follows: M1 = /-ʔú/ <-อื่อ> 'sequence of action marker'; M2 = /-nə/ <-แน> 'sequence of time marker'; M3 = /-ná/ <-น้ำ> 'sequence of subject marker'; M4 = /-lá/ <-แล> 'sequence of quotation marker'; M5 = /-jé/ <-เจ> 'quotation marker'; M6 = /-ʔa/ <-อา> 'focus marker'; M7 = /-ʔón/ <-อ็อง> 'goal marker'; M8 = /-ʔë/ <-เออ> 'possessive marker'.

ʔájíbfídiq	xw-ʔë	ǵǵbón	yáŋə	ʔí-ʔónə,
อาฉีบีตี	ฮอ-เออ	หญ่บ้อง	ย่านาง	อี-อ็องแน,
"Little Bird"	add-A	grasshopper	field	go-down-M1M2,

The "Little Bird" and the Grasshopper went down to the field weeding.

yámòq	mòq'ʔí-ʔë.	ʔùcìq	mòq'cìq-náʔ,	ʔòqlé'-malá,
ย่าโหมะ	โหมะอี-เออ.	อุฉี	โหมะฉี-น้ำ,	โงะเล-มาแล,
weed weeding	go-down-A.	Evening weeding	evening-M3,	return go-up-AM4,

After weeding until evening, "Let's go home!"

ʔá-ʔëŋa.	ʔájíbfídiq-ʔà,	ʔòqlé'-malá,	ʔá-náʔ,	ǵǵbón-ʔà,
เอ-เอองา.	อาฉีบีตี-อา,	โงะเล-มาแล,	เอ-น้ำ,	หญ่บ้อง-อา,
said-AA.	"Little Bird"-M6,	return go-up-AM4,	said-M3,	grasshopper-M6,

he said. After the "Little Bird" had said "Let's go home!" the grass-hopper

CHAPTER SEVEN

PHLONG

(PWO KAREN OF HOT DISTRICT, CHIANG MAI)

JOSEPH R. COOKE, J. EDWIN HUDSPITH, AND JAMES A. MORRIS

1. The purpose of this paper is to describe the phonology of a particular dialect of Phlong (Pwo Karen) spoken in Hot District in the southwestern part of Chiang Mai Province in northwest Thailand, and to propose a system for transcribing the speech of this dialect by means of an adapted Thai script. The research embodied here was carried out by the co-authors over a period extending from 1955 to 1968. The phonological analysis in this paper is largely based on a previous unpublished article by Cooke (1963). The script here proposed was developed by Hudspith and Morris, and was tested through the preparation and use of written materials (a primer, a hymnal, and some Bible stories) which were duplicated and made available to a few Phlong who were taught to read. The principal informants through the years have been: Pai? Lwe <ໂປ້ະ ເລວ໌> and Tai? Pwe <ໂຕ້ະ ເປວ໌> from the Hot District plains area, and Mai? Khan <ເກີ້ະ ຄ່າງ> and Pai? Chə <ໂປ້ະ ເຊອ> from the mountain area to the west of Hot. The present description applies mainly to the subdialect of Phlong spoken on the plains of Hot District, but occasionally data from the nearby mountain dialect are included. The difference between the two dialects is minimal.

The term Phlong is used to designate an ethnic group and a language which has been variously referred to in the literature as P'wo, Pwo, or Pho Karen (กะเหรี่ยงเผ่าปว). All these variant forms of the term "Pwo" are actually derived from the name used for these people by a sister tribe, the Paganyaw /pagañw/ (Sgaw Karen, กะเหรี่ยงเผ่าสะกอ). The people

themselves use the term Phlong Shu /phiôn syù/ <โพล่ง ลู่> or simply Phlong, which will be used throughout this paper.

The Phlong (Pwo Karen) constitute a subgroup of the larger family of Karen peoples. Most Karen live in Lower Burma, where Jones (1961:5) using the 1931 census figures, estimated between one and a half to two million people. In Thailand, as in Burma, Paganyaw are the most numerous. Karen in Thailand are to be found in the central plains region but most of them are in the northern and western hill areas.¹

The distribution of Phlong (Pwo Karen) in Thailand is summarised in Fig. 1. Differences of location of Phlong groups coincide with dialectal variation. Groups are listed in decreasing order of familiarity to the writers of this article in 1968.

LOCATION		POPULATION	NUMBER OF VILLAGES
<i>Province</i>	<i>District</i>		
Chiang Mai	Hot (plains)	4,500	20 plus
" "	" (mountains)	} 13,000	150
" "	Omkoey		
Mae Hong Son	Mae Sariang (south)		
Lamphun	Mae Tha	?	(Beginning of new migration)
"	Li	4,000	15
"	Ban Hong	1,500	8
Lampang (N)		750 (?) ^c	?
Chiang Rai (N)		750 (?) ^c	8
Phrae (N)		3,000 ^c (reported)	13
Tak	Umphang	10,000 ^d (reported)	?
Kanchanaburi	Sangkhla Buri		
TOTAL		37,000	200 plus

Fig. 1. Distribution of Phlong (Pwo Karen) in Thailand (1968).

^cEstimated by Cooke, 1957; ^dEstimated by Paul Dodge of Sangkhla Buri, 1967; other estimates by Hudspith and Morris, 1963. According to Hudspith, these population figures can be doubled without exaggeration (1973).

¹Jones (1961) does not include the language being described in this paper, however.
(continued on p. 189)

The Phlong of Hot District know nothing about the Phlong script used in Burma (Stern 1968), but many of the mountain Phlong in and near Hot District do know something of the Paganyaw (Sgaw Karen) script (Chapter 1) - enough to be able to write out Paganyaw songs (which the Phlong themselves use)¹ and also to be able to identify individual letters of the alphabet. However, Phlong exposure to Paganyaw script is at best rudimentary. Tonal marks are largely lost, and use of symbols has been primarily if not entirely associated with the Paganyaw language - a language which is unintelligible to the vast majority of Phlong in Thailand. There has been no use of the script for reading or writing Phlong there.

2. PHLONG PHONOLOGY

2.1 THE SYLLABLE

The phonological system of Phlong is here analysed in terms of the make-up of the syllable, a clearly defined unit in the language. Each syllable is composed of an optional (but nearly always present) initial consonantal segment having one or two consonants, plus a final vocalic segment comprising a vowel or diphthong, an accompanying tone, and optional nasalisation or glottalisation. The permissible shapes of the syllable may be summarised by the formula $(C_1)(C_2) V^t (n/?)$, where C = consonant, V = vowel, t = tone, n = nasalisation, and ? = glottalisation. Elements in parentheses are optional. All possible combinations implied by the formula occur except $V^t n$, although there are restrictions (to be discussed later) as to what vowels, consonants, tones, etc., may occur together. The following examples illustrate the range of possibilities:

V^t	/-â/	<-ṳṳ>	'(question particle)'
$V^t ?$	/-â?/	<-ṳṳ>	'him, her, it' (objective form)
CV^t	/ṳâ/	<ṳṳ>	'dirty'
$CV^t ?$	/la?/	<ṳṳ>	'underneath'
$CV^t n$	/lân/	<ṳṳ>	'to descend'
CCV^t	/blɛ/	<ṳṳ>	'to recover'
$CCV^t ?$	/blâ?/	<ṳṳ>	'powdered'
$CCV^t n$	/klân/	<ṳṳ>	'to slash'

(continued from previous page)

Although the Karen groups of Burma have been described to varying degrees, there is very little anthropological or linguistic material about the Phlong group in Thailand. See Young 1962:75-7; Hamilton 1963, 1965. On the Pwo Karen in Burma see Marshall 1922.

¹All but one or two of the Phlong repertoire of songs are in the Paganyaw dialect - a fact that is true even for the plains Phlong who have little contact with Paganyaw speech.

Basically there are two kinds of syllables, preposed and normal, differentiated from each other by stress and limitations on possibilities of cooccurrence of various features of the vocalic segment of the syllable. Preposed syllables are always unstressed, unnasalised, and undifferentiated from each other as to vowel (always /ə/) and tone (always mid tone). They may occur singly or in sequence (usually not more than two preposed syllables in succession), but they never occur utterance final. That is, in any given utterance where one or more such syllables occur, there must be at least one normal syllable following them. Normal syllables are always accompanied by stronger stress than preposed syllables, and they are not so limited as to cooccurrence of various features of the vocalic segment such as vowels, diphthongs, tones, and nasalisation.

Phlong syllables differ from Thai in the following respects: Phlong vowels and diphthongs may be phonemically nasalised, whereas Thai may not. However, a feature of Phlong nasalisation is the occurrence of [-ŋ] with many nasalised vowels. This is phonetically but not systemically similar to Thai final /ŋ/ <๓>. Also, Phlong vowels and diphthongs, unlike Thai, lack contrast between long and short vocalic segments. And again, Phlong syllables have no final consonant,¹ whereas Thai syllables have a variety of stop and nasal finals. Finally, the Phlong syllable allows forms in which there is no initial consonant, while in Thai - at least in the written language and also in deliberate speech - all syllables must have at least one initial consonant in at least one of the alternate forms of a word.

2.2 THE CONSONANTAL SEGMENT OF THE SYLLABLE

Phlong syllables without initial consonants always appear in conjunction with some preceding syllable. They are pronounced with an unbroken glide from the vowel of the preceding syllable; and if the preceding syllable is glottalised, the usual terminal glottal closure is reduced to glottal friction rather than complete closure.

Syllables with zero initial consonant contrast with syllables having initial glottal stop; compare /be-â/ <๒๒-๑๓> '*is (that) correct?*' and /be?â/ <๒๒๑๓> '*to be dirty*'. Syllables without initial consonant are transcribed phonemically here with an initial hyphen in order to avoid ambiguity as to syllable division.

¹Syllables may be terminated by a phonetic glottal stop or velar nasal, as described elsewhere. These are handled throughout this paper as prosodic or suprasegmental features called glottalisation and nasalisation, although transcribed phonemically by means of the symbols /? n/ immediately following the vowel with which they occur.

The inventory of Phlong consonants is charted in Fig. 2. All items occur as single initial consonants.¹ Further details of pronunciation, and examples of each phoneme are given later in this section.

	Bilabial	Alveolar	Palatal	Velar	Glottal
Stops					
<i>Voiceless unaspirated</i>	p	t	c [č]	k	ʔ
<i>Voiceless aspirated</i>	ph	th	ch [čh]	kh	
<i>Voiced implosive</i>	b ['b]	d ['d]			
Spirants					
<i>Voiceless</i>	f [fw]	s [θ/ɬ]	sy [š]	x [xr]	h
<i>Voiced</i>				g	
Resonants					
<i>Semivowels</i>	w [vw]		y		
<i>Nasals</i>	m	n	ny [ɲ]	ŋ	
<i>Lateral</i>		l			
<i>Trill</i>		ʀ			

Fig. 2. Inventory of Phlong (Pwo Karen) consonants. Symbols in [] indicate phonetically the major details of pronunciation when these are not obvious from the phonemic symbol. /ʀ/ occurs in the Mountain dialect only.

There are approximate Thai equivalents of all Phlong consonant phonemes except /sy ny x g/. In Fig. 3 Phlong consonants are charted using the Thai symbols when there is a fairly close equivalence.

¹The segments /sy/ [š] and /ny/ [ɲ] are here listed as unitary phonemes. It would be possible to analyse these, along with the other palatal consonants /c/ and /ch/, as clusters consisting of an alveolar plus /y/. This alternative solution has been rejected partly because there is no real phonetic reason for adopting it, and partly because its acceptance would result in the unique triple initial consonant clusters /tyw/ and /thyw/. (There would be no comparable cluster /syw/ or /nyw/, but in the latter case, this may be only because the segment [ɲ] is so rare. In other dialects of Phlong, the combination [ɲw] does occur.) In representing /sy/ and /ny/ in Thai orthography, however, it proves to be satisfactory to treat these segments as orthographic sequences.

	Bilabial	Alveolar	Palatal	Velar	Glottal
Stops					
<i>Voiceless unaspirated</i>	ป	ต	ค	ก	อ
<i>Voiceless aspirated</i>	ผ/พ	ถ/ท	ช/ช	ข/ค	
<i>Voiced implosive</i>	(บ)	(ด)			
Spirants					
<i>Voiceless</i>	(ฝ/ฟ)	(ส/ซ)	((ลย/ชย))	((ฃ))	ห/ฮ
<i>Voiced</i>				((ฅ))	
Resonants					
<i>Semivowels</i>	(ว)		ย		
<i>Nasals</i>	ม	น	((นย))	ง	
<i>Lateral</i>		ล			
<i>Trill</i>		ร			

Fig. 3. Comparison of Karen and Thai consonants. Symbols in parentheses represent phonemes which are somewhat different in pronunciation between Thai and Phlong. Symbols in double parentheses are arbitrary Thai letter symbolisations of Phlong phonemes which do not have Thai counterparts. These are included here simply because they are used in representing Phlong in Thai script.

Examples follow of each of the single initial consonants of Phlong with additional details concerning the pronunciation of phonemes not sufficiently described by the information contained in Fig. 2. For most consonants, regular or irregular variations of pronunciation (i.e. allophones) are of comparatively minor significance. Voiceless stops are usually pronounced fortis. The phonemes /f h ny ŋ/ are rare, and of these all except /ny/ seem to be the result of borrowings from Northern Thai.

Stops

/p/	[p]	/pâi?/ <ปื> 'second child'
/t/	[t]	/tâi/ <ต> 'to create', /tô/ <ต> 'true'
/c/	[č]	/côn/ <คง> 'place', /cô/ <คง> 'eldest child'
/k/	[k]	/ke/ <ก> 'difficult', /kô?/ <ก> 'to call'
/ʔ/	[ʔ]	/ʔo/ <อ> 'to have, to be located'
/ph/	[ph]	/phâi?/ <พ> 'skin'
/th/	[th]	/thâi/ <ท> 'to return'
/kh/	[kh]	/khe/ <ค> 'bitter'

- /b/ ['b] An implosive stop /bâi?/ <โบบ> 'to squeeze'
 /d/ ['d] An implosive stop /dâi?/ <โด้> 'still, yet', /dô/ <ด้อ> 'knife'

Spirants

/f/ [fw] A voiceless labiodental spirant, pronounced with lip rounding and slight voiceless-to-voiced bilabial release (i.e. with a slight [w] offglide). The labiodental friction is produced with the lower lip held well up and in front of the upper teeth. This phoneme is rare and occurs chiefly in words borrowed from Myang (Northern Thai): /thônfan/ <โห่งฟาง> '(place name)' (cf. Myang /hūayfān/, Thai ห้วยฝาง, from /fān/ <ฝาง>, the name of a kind of tree); /tānfā?/ <ต้างฝะ> 'non-irrigated fields' (cf. Thai ตั้งฟ้า /tānfāa/ lit. 'exposed to the heavens').

/s/ [s̺/θ] A voiceless alveolar spirant pronounced by some speakers, especially from the plains, as a fronted grooved spirant [s̺], and by others, especially from the mountains, as a flat fronted alveolar or back dental spirant [θ]: /son/ <สอน> 'to teach'.

/sy/ [š] A voiceless palatal spirant pronounced with the blade or mid part of the tongue, the tip of the tongue being down behind the lower teeth. /syon/ <ซยอง> 'together', /syè/ <สย๋> 'old (of persons)'.

/x/ [xr] A voiceless velar fricative with slight [r] offglide: /xô?/ <โห> 'right (opposite of left)'; /xái/ <โห> 'dry'.

/h/ [h] Rare, occurring chiefly in words borrowed from Myang (Northern Thai): /hai?/ <โห> 'box' (from Myang /hìp/, Thai หีบ 'box'); /hə/ <เฮ> 'cholera' (from Myang /hāa/, Thai ห่า 'infectious disease, cholera').

/g/ [ɣ] /gô?phan/ <โอะพาง> 'friend'; /gé/ <เฒ> 'to come'.

Semivowels

/w/ [vw] ~ [w] In initial position pronounced as a voiced labiodental spirant with lip rounding and with a voiced [w] offglide (the offglide being more clearly discernible here than it is with /f/); as the second member of a consonant cluster pronounced simply as a voiced bilabial semivowel: /wê/ <เว> 'husband'; /wâ?tho?/ <วะโทะ> 'to tremble'; /kwê?/ <เคว> 'to write'.

/y/ [ɣ] In initial position pronounced as a voiced palatal sonorant, usually accompanied by noticeable palatal friction; also occurs as the second member of a consonant cluster and is there usually pronounced with little or no accompanying friction: /yê/ <เย> 'I, me'; /yàndên/

<หย่างเต้ง> 'loins'; /kyǝ/ <ก๊อ> 'slow'.

Nasals

/m/ [m] /mê/ <แม่> 'to make, do'

/n/ [n] /nê/ <แน> 'night'; /nôn/ <โหน่ง> 'horn'

/ny/ [ɲ] Rare, but not to be accounted for in terms of Myang borrowings: /nyǝnkhwaɪ/ <นย้งไขว> 'to throw away'; /nyǝn/ <หนย้ง> 'tattooing'.

/ŋ/ [ŋ] A lenis velar nasal; rare, and occurring chiefly in Myang loan words. /ŋǝ/ <ง> 'cow' (from Myang /ŋua/, Thai วัว /wua/ 'cow'); /ŋǝn/ <หน้ง> 'a plow' (from Myang /ŋǝnthǝj/, 'plow').

Lateral

/l/ [l] /lê/ <แล> 'moon'; /lai/ <ไหล> 'book'.

Trill

/r/ [r̥] Voiced alveolar trill; occurs in Hot mountain dialect, but not in plains speech except after /t/ (see Fig. 4); otherwise, in words where mountain dialect uses /r/, plains dialect uses /l/. /rǝi/ <ไร> 'to cut (as with scissors)'.

Double initial consonants

All consonants except /f w sy g ny ŋ r/ occur as the first members of double initial consonant clusters. In double initial clusters, the second member of the cluster may be /w/, /y/, or /l/, or (in the mountain dialect) /r/. The inventory of possible double cluster combinations is set forth in Fig. 4, along with examples of each type of cluster. The examples for /r/ clusters are from the mountain dialect. The same examples, except /tr/, are pronounced as clusters with /l/ by plains speakers.

An examination of Fig. 4 reveals that labial consonants (except /f/ and /w/) and velar stops occur with the full range of possible second initials. Alveolars occur chiefly with /w/ as the second member of the cluster, while palatals, /ʃ/, and /x/ occur only with /w/ in clusters.

In comparison with Thai, both languages have clusters with /w/, /l/, and /r/, but Phlong has cluster with /y/ while Thai does not. Also, Thai /w/, /l/, and /r/ clusters are much more restricted than those of Phlong. In Thai only /p t k ph th kh/ occur as initial members of clusters; and of these, /t/ and /th/ are followed only by /r/, while only /k/ and /kh/ are followed by /w/.

Clusters with initial labials

pw	(pl)	(pr)	py	/pwâi?/ <ไปวิ> 'tired'; /plîpplî?/ <ปล้อเปล๊ะ> 'empty'; /pra?!/ <ประ!> 'together' (euphonic); /pyô?/ <ไปย๊ะ> 'to vomit'
phw	(phl)	(phr)	phy	/phwîn/ <พริ้ง> 'bare hilltop'; /phlîn/ <พลึง> 'rope'; /phrê/ <แพร่> 'to reach'; /phyê?/ <แพยะ> 'to compare to' (from Thai เปรียบ /prîap/ 'to compare to')
bw	bl	br	by	/bwê/ <เบ๊> '5 satang piece'; /blê?/ <เบลิ> 'pulverised'; /blînbbru/ <บล้องบรู> 'to act vicious' (mt.); /bye/ <เบย> 'blanket'
mw	ml	mr	my	/mwîn/ <มื้ง> 'friend'; /mlînb/ <มलों> 'elephant's trunk'; /mra?mra?/ <เหมระ ะ> 'many'; /myûn/ <มยूं> 'kind' (classifier)

Clusters with initial alveolars

tw	--	(tr)	--	/twê/ <เต๊> 'to twist rope'; /kətra?/ <กเตร๊ะ> 'idle'
thw	--	--	--	/thwîn/ <ทริ้ง> 'dog'
dw	--	--	--	/dwâ?/ <ดวิ> 'to count'
sw	--	--	--	/swîn/ <ซริ้ง> 'blood'
nw	--	--	--	/nwê/ <เน๊> 'seven'
lw	--	--	ly	/lwê/ <เล๊> 'rich'; /pòlyau/ <ป้อเลยา> 'employer' (from Thai พ่อเลี้ยง /phôlîang/ 'step father')

Clusters with initial palatals

cw	--	--	--	/cwê/ <แคว> 'to crawl'
chw	--	--	--	/chwi/ <ชวิ> 'crab'
yw	--	--	--	/ywê/ <แย> 'to flow'

Clusters with initial velars

(kw)	(kl)	(kr)	ky	/kwê?/ <เก๊> 'to write'; /klê/ <เกล> 'road'; /krâ?/ <กร๊ะ> clf. for cigarette lighters; /kyô/ <กย้อ> 'slow'
------	------	------	----	---

(khw)	(khl)	(khr)	khy	/khwín/ <ครึ่ง> 'nine'; /khlái/ <โคล> 'to speak'; /khraí?khraí?/ <เขริะ ฤ> 'often'; /khyu/ <คย> 'a cord of wood' (from Myang /khiw/ 'arranged in rows')
xw	--	--	--	/xwí/ <ขวิ> 'to buy'
ŋw	--	--	--	/ŋwíŋwái?/ <งวิงวเว> 'sound of a pig'

Clusters with initial glottals

?w	--	--	--	/?win/ <อวิง> 'delicious'
hw	--	--	hy	/hwínmuŋ/ <ฮวิง ม้ง> place name (from Thai ห้วยหมู /húaymuŋ/ 'hog creek'); /hyé/ <แฮย> 'scattered' (from Myang /hʔa/); /hyú/ <ฮย> 'thirsty' (from Myang /hʔw/, Thai หิว)

Fig. 4. Karen consonant clusters. Items in parentheses correspond to Thai clusters.

2.3 THE VOCALIC SEGMENT OF THE SYLLABLE

This portion of the syllable comprises a vowel or diphthong accompanied by one of four tones and also, optionally, by nasalisation or glottalisation. The vowels and diphthongs are listed in Fig. 5 and are compared with the inventory of Thai vocalic nuclei. It will be observed that both Karen and Thai have a nine vowel system; and as a matter of fact, the phonetic values of the vowels in the two languages (ignoring for the moment Phlong nasalised and glottalised vowels) are quite similar. One minor difference exists in connection with the vowel /o/, which in Phlong has a slight [w] offglide, but in Thai does not. The most obvious difference between the two languages here lies in the fact that Thai differentiates long and short vowels, while Phlong does not. However, Phlong simple vowels are often comparable in length to Thai long vowels, and Phlong glottalised vowels are sometimes comparable in length to Thai short vowels.

In the case of diphthongs, Phlong combinations are true high vowel offglides, while the Thai are basically double vowel combinations, usually with slightly more emphasis on the first vowel than the second, and gliding lower and toward central tongue position. On the other hand, Phlong diphthongs are rather like Thai combinations in which the vowel /a/ or /aa/ is followed by /y/ or /w/; but Karen diphthongs may be glottalised (/a+/ always is), whereas comparable Thai combinations may not be pronounced with glottal stop in the same way that Thai syllables

with final short vowels can. Also, there is no Thai counterpart for Phlong /a+/.

	Phlong				Thai		
	<i>Front</i>	<i>Central</i>	<i>Back</i>		<i>Front</i>	<i>Central</i>	<i>Back</i>
<i>High</i>	i	ɨ	u	<i>High</i>	ɪ, ii	ɨ, ɨɨ	u, uu
<i>Mid</i>	e	e	o	<i>Mid</i>	e, ee	e, ee	o, oo
<i>Low</i>	ɛ	a	ɔ	<i>Low</i>	ɛ, ɛɛ	a, aa	ɔ, ɔɔ
<i>Diphthongs</i>	ai	aɨ	au	<i>Diphthongs</i>	ia	ɨa	ua (also various long and short vowel offglides ending in /w/ and /y/).

Fig. 5. Phlong and Thai vowels and diphthongs

Another difference between the vowels and diphthongs of the two languages, not revealed in Fig. 5, is the fact that Phlong vowels and diphthongs, with a few exceptions, may be nasalised, whereas Thai may not. Also, Phlong vowels and diphthongs have very distinctive variant pronunciations when occurring nasalised or glottalised.

2.3.1 Vowels and diphthongs

Vowels and diphthongs constitute the main element in the vocalic segment of the syllable. Nearly all of the vowels and diphthongs have variant pronunciations depending on whether the syllable is glottalised, nasalised, or plain (i.e. neither glottalised nor nasalised). The phonetic values of vowels and diphthongs are summarised in Fig. 6. Small raised wedges point in the direction of the tongue position as against the tongue position usually assumed for the vowel symbols used. [˥] under a vowel here indicates a non-syllabic offglide. A small subscript hook [ᵚ] again represents nasalisation. A dash indicates combinations which do not occur.

As may be seen from Fig. 6, all Phlong plain vowels except /o/ are pronounced without a terminal offglide. And all plain diphthongs begin from low central tongue position, terminating respectively in high front, mid, and back vowel offglides.

All nasalised vowels except /en/ and /on/ begin at approximately the same tongue and lip positions as their plain unnasalised counterparts but are terminated by nonphonemic higher vowel offglides. The vowels of /en/ and /on/, however, begin with noticeably centred vowels before terminating in higher offglides. The terminal raising of the mid vowels

is usually more obvious than that of other nasalised vowels. Also, in the mountain dialect, high nasalised vowels are in their entirety pronounced extra high, and without clear nasalisation (Section 2.3.3).

	Front	Central	Back
High	/i/	/ɨ/	/u/
Plain	i ^v ɨ	ɨ ^v ɨ ^v ɨ	u ^v ɯ
Nasal	i ^v ɨ [^] ɨ ^v ɨ [^]	ɨ ^v ɨ [^] ɨ ^v ɨ [^]	u ^v ɯ [^] ɯ ^v ɯ [^]
Glottalised	--	--	--
Mid	/e/	/ə/	/o/
Plain	e ^v ɛ	ə ^v ɛ-ə	o ^v ɯ ^v ɔ
Nasal	e ^v ɨ [^] ɛ-ɨ [^]	ə ^v ɨ [^] ɛ-ə [^]	o ^v ɯ [^] ɔ-ɯ [^]
Glottalised	e ^v ɨ [^] ? ɛ-ɨ [^] ɨ	ə ^v ɨ [^] ? ɛ-ə [^] ɨ	o ^v ɯ [^] ? ɔ-ɯ [^] ɨ
Low	/ɛ/	/a/	/ɔ/
Plain	æ [^] ʌ	ɑ -ɾ	ɔ [^] -ə
Nasal	--	ɑ [^] ɨ [^] -ɾɨ	ɔ [^] ɯ [^] -əɯ
Glottalised	æ [^] ? ʌ-ɨ	ɑ [^] ? -ɨ	ɔ [^] ? ɔ-ɾɨ
Diphthongs	/ai/	/aɨ/	/au/
Plain	a [^] i ^v ɿ	--	a [^] u ^v ɿ-ɾ
Nasal	--	--	--
Glottalised	a [^] i ^v ? ɿ-ɨ	a [^] ɨ [^] ? ɿ-ɨ	a [^] u ^v ? ɿ-ɾɨ

Fig. 6. Phonetic values of Phlong plain, nasalised and glottalised vowels. Thai symbols listed on the chart are those used for representing each of the Phlong vocalic combinations that occur, and are included here for later reference.

Glottalised non-diphthongs have approximately the same tongue and lip positions as their plain counterparts, except that /e?/ and /o?/ are terminated in the plains dialect (though not in the mountain dialect) with higher vowel offglides. All glottalised diphthongs are pronounced with the /a/ in higher tongue position than is characteristic of this vowel elsewhere. In addition, the /a/ of /aɨ?/ is usually fronted, whereas that of /au?/ is backed. However, if /aɨ?/ is preceded by an initial double consonant cluster with /w/ as the second member of the cluster, then the /a/ is raised and backed, as in /xwai?/ [xwɔ^vi^v?] <ໝາຍ> 'intestines'. Also, if /au?/ is preceded by /m/, or sometimes with some speakers, if it is preceded by other nasals, the /a/ is raised and backed further than is usually the case for the checked diphthong

/au?/; for example, /mâu?se/ [mô^hu^h?se] <เมีนา> 'guava' (from the local form of Myang /má?mút/); but /kâu?/ [kâ^hu^h?] <เคี้ยว> 'to cough'.

The weak-stressed vowel /ə/ of preposed syllables (see Section 2.1) usually has the same vowel quality as the open or checked vowel /ə/ and may be considered to be the same phoneme. Unlike the latter, however, it has a lower vowel pronunciation when it occurs following the consonant /ʔ/. Thus /cəmù/ [čə^hmù^h] <แม่> 'my mother', but /ʔəmù/ [ʔə^hmù^h] or [ʔəmù^h] <อ-แม่> '(his) mother'. The weak-stressed vowel never shows contrastive pitch.

Examples of permissible vocalic segments are listed below by environment for each vowel and diphthong. Phonetic values, if not specified here, may be determined by reference to Fig. 6. Environments are identified by number or letter according to the following scheme.

1. Occurrence in plain (i.e. unnasalised, unglottalised) syllables
2. Occurrence in nasalised syllables
3. Occurrence in glottalised syllables
4. Occurrence as first member: (a) of a plain diphthong, (b) of a nasalised diphthong, (c) of a glottalised diphthong
5. Occurrence as second member: (a) of a plain diphthong, (b) of a nasalised diphthong, (c) of a glottalised diphthong
6. Occurrence with weak stress (i.e. in preposed syllables)

Other environments than those specified above are identified where they apply. Subphonemic nasalisation of vocalic segments following nasal consonants is ignored (see 2.3.3). When there are no perceptible phonetic differences of the same phoneme in different environments, those environments are grouped together.

High vowels

/i/ 1. /iʔ/ <อิ> 'to go'. 2. /iʔn/ <อิน> 'wind'. 5a. following /ʔ/: [i^h] /ʔai/ <ไอ> 'to bite'; elsewhere: [i^h] /cai/ <ไ> 'to walk'. 5c. /saiʔ/ <ไอ> 'whisky'.

/ɨ/ 1. /phɨ/ <อิ> 'to be short'. 2. /phɨn/ <อิน> 'to carry (on the back)', /bɨn/ <อิน> 'rice plant'.

/u/ 1. /yû/ <ยู> 'Northern Thai person', /phu/ <พู> 'child, offspring'. 2. /yûn/ <ยู> 'to fly'. 5a. /myau/ <เมย> 'fermented tea'. 5c. /dâuʔ/ <เต> 'house'.

Mid vowels

/e/¹ 1. /lê/ <เอ> interrogative particle, /ke/ <เ> 'to be'.

¹Some mountain dialect speakers pronounce all words having plain vowel /e/ as /ɛ/,
(continued on p.200)

2. /lên/ <เล็ง> 'to twine'. 3. /khê?/ <เคะ> 'instead of'.

/ə/ 1,3. /thə/ <เถ> 'thing', /kê?/ <เกื้อ> predicate particle, /dê?/ <เดื้อ> emphatic particle. 2. /thən/ <เทิง> 'to be perpendicular'.
6. following /ʔ/: [q̤^] or [ʌ] /ʔəm+n/ <อ-ผิง> 'woman'; elsewhere: [ə̤^] /kəchán/ <นกช้าง> 'elephant'.

/o/¹ 1,3. /yô/ <โย> 'this', /ʔô/ <โ> 'there, yonder', /thəðô?/ <ทโด้> 'vegetable', /yô?/ <โยะ> 'to carry (with a carrying pole)'.
2. /lon/ <โลง> 'maggot'.

Low vowels

/ɛ/ 1. after /h/: [q̤^ ~ q̤^] /hê/ <เฮ> 'what?, huh?'; elsewhere: [q̤^] /lê/ <เล> 'month'. 3. /pɛ?/ <เปะ> 'to dodge'.

/a/ 1,3. /lâ/ <ล่า> 'to be warm', /la?/ <หละ> 'underneath', /dâ?min/ <ดีะผิง> 'flashlight'. 2. /lân/ <ล่าง> 'to descend'. 4a. following /ʔ/: [q̤] /ʔai/ <โ> 'to bite'; elsewhere: [a] /kai/ <ก> 'to be crooked', /pôlyau/ <ป้อเลยา> 'employer'. 4c. in diphthong /ai/ after consonant plus /w/: [w̤] /xwai?/ <โหวะ> 'intestines'; elsewhere: [a̤] /khâi?/ <โคะ> 'to be dark'. 4c. in diphthong /au/ after nasal consonants by some speakers: [w̤] /mâu?sɛ/ <เฝ้า> 'guava'; elsewhere: [a̤] /dâu?/ <เต้า> 'house'. 4c. in diphthong /a+/: [a^] or [ʌ] /ma+?/ <เหมะ> 'to be well'.

/ɔ/ 1,3. /ʔɔ/ <อ> 'to have', /lô/ <ล> 'to tell', /dô?/ <เดื้อ> 'again'. 2. /lôn/ <ล> 'to be straight'.

Diphthongs

/ai/ 1. following /ʔ/: [q̤i^] /ʔai/ <โ> 'to bite'; elsewhere: [q̤i^] /kai/ <ก> 'to be crooked'. 3. /kâi?/ <ก้ำ> 'kapok tree'.

/a+/ 3. /ma+?/ <เหมะ> 'to be well'.

/au/ 1. /myau/ <เมยา> 'fermented tea'. 3. after nasals by some speakers: [w̤] /mâu?sɛ/ <เฝ้า> 'guava'; elsewhere: [a̤] /dâu?/ <เต้า> 'house', /kâu?/ <เก้า> 'to cough'.

(continued from previous page)

so that contrast between /e/ and /ɛ/ in plain syllables is lost. For example, the question word /lê/ <เล> is pronounced /lê/ <เล>, homonymous with /lê/ <เล> 'moon'.

¹Some mountain dialect speakers pronounce all words having plain vowel /ɔ/ as /o/, so that contrast between /o/ and /ɔ/ in plain syllables is lost; for example, /kyô/ <โ> 'slow' instead of /kyô/ <โ>, /ʔô/ <โ> 'to drink' instead of /ʔô/ <โ>. Words having plain vowel /o/ are rare, however, so homonymy rarely results from the loss of phonemic contrast in this instance.

2.3.2 Tones

All vocalic segments of syllables are accompanied by one of four possible tones. Features of pitch and comparative length for Phlong and Thai tones are charted in Fig. 7.

In normal plain and nasalised syllables (i.e. in syllables other than preposed ones or glottalised), Phlong tones are usually pronounced with medium to long duration; however, the high tone tends to be a little shorter than the others, and to fall off in volume towards the end when it occurs in utterance-final position.

All tones in normal open syllables may be pronounced with either of two special types of intonation: raised, and rising.¹ Raised intonation is characterised by extra high, level pitch (see dotted lines in Fig. 7), while rising intonation has low-to-high rising pitch (broken lines). When either type of intonation occurs, contrast between one tone and another is entirely lost. In glottalised syllables mid and falling tones have special variants, as marked in separate columns of the chart. These glottalised variants are usually pronounced with somewhat shorter duration than their open syllable counterparts, although under certain prosodic conditions they may be pronounced in a long, drawn-out fashion.²

Features of pitch of the four Phlong open syllable tones are quite similar to those of their Thai counterparts, especially when pronounced in syllables in utterance non-final position (see dotted lines on Thai portion of chart). However, in utterance final position, Thai mid and high tones have special contour features which the corresponding Phlong tones do not. Then, of course, Thai has a rising tone which has no Phlong counterpart.

Comparisons can also be made between the two languages with regard to the possibilities of cooccurrence of tone with other features of the syllable. These are summarised in Fig. 8.

A comparison of the two parts of Fig. 8 reveals a rather important similarity between Phlong and Thai: the fact that open syllables occur freely with all tones in both languages, whereas closed syllables in Thai (i.e. those syllables ending in a stop consonant or a short vowel) and glottalised syllables in Phlong are restricted as to tonal variation (Appendix 2). Phlong glottalised syllables are restricted to two

¹It is possible that tones in glottalised syllables also may have raised or rising intonation, but data are insufficient for adequate analysis of this phenomenon.

²It would be possible to consider these glottalised variants of mid and falling tones as two additional tonemes rather than as allotones of already existing tones, but see 2.3.4 and footnote.

Phlong Tones Pitch	Mid		Low	Falling		High	
	<i>Plain or nasalised</i> (no symbol)	<i>Glottalised</i> /-ʔ/		<i>Plain or nasalised</i> /^/	<i>Glottalised</i> /^ʔ/		
High	
Mid							
Low							

Thai Tones Pitch	Mid (no symbol)	Low /^/	Falling /^/	High /'/	Rising /ˊ/
High					
Mid					
Low					

Fig. 7. Features of pitch and length in Phlong and Thai tones.

PHLONG SYLLABLES AND TONES					THAI SYLLABLES AND TONES					
Types of Syllable	Cooccurring Tones				Types of Syllable	Cooccurring Tones				
	<i>Mid</i>	<i>Low</i>	<i>Falling</i>	<i>High</i>		<i>Mid</i>	<i>Low</i>	<i>Fal-ling</i>	<i>High</i>	<i>Ris-ing</i>
<i>Plain or nasalised</i>	+	+	+	+	<i>Open</i>	+	+	+	+	+
<i>Glottal-ised</i>	+	-	+	-	<i>Closed</i>					
					Final short vowel	*	+	(+)	+	-
					Short vowel + stop	*	+	-	+	-
					Long vowel + stop	-	+	+	(+)	-

Fig. 8. Phlong and Thai tones with various syllable types.

+ and - show cooccurrence and lack of cooccurrence, * indicates that the cooccurrence occurs in speech, but is not reflected in writing. Parentheses indicate that the cooccurrence is relatively rare.

tones. A significant difference between the two languages may be observed in the fact that the tones of Phlong glottalised syllables are pronounced somewhat differently from the same tones in open syllables (Fig. 7), whereas Thai tones on closed syllables tend to be rather like tones on corresponding open syllables.

2.3.3 Nasalisation

All simple vowels in Phlong except /ɛ/ may be nasalised;¹ diphthongs never are. Phonetically, nasalisation is marked by both nasalisation and vowel quality. Nasalisation, except after nasal consonants, begins slightly after the inception of the articulation of the vowel. This delay is only very slightly discernible with low vowels, is slightly more noticeable with mid vowels, and is slightly more evident still with high vowels. After nasal consonants nasalisation is not delayed.

All phonemically nasalised vowels are characterised also by a terminal non-syllabic raising of the tongue position. This terminal raising is very clear after mid vowels, but rather brief and much less obvious after high vowels and /a/. After /ɔ/ the raising is quite clear with some speakers, especially some from mountain areas, but it is less clear with others. Syllables which in plains Phlong have high nasalised vowels /in, ɛn, un/ are pronounced in the mountain dialect without clear nasalisation, and terminal raising of the tongue is less obvious than in plains Phlong. Instead, these vowels are pronounced with extra high tongue position throughout the duration of the vowel - even to the point of slight friction between the tongue and the roof of the mouth.

Terminal raising of the tongue along with delayed nasalisation serves to distinguish phonemic nasalisation from a non-phonemic nasalisation which takes place after all nasal consonants. The following are some examples of contrasting nasalised vowels and corresponding vowels which are phonemically unnasalised.

/lân/	[lân̥ ^h]	<ḥṇ>	'to descend'
/nân/	[nân̥ ^h]	<ṇṇ>	'some'
/lîn/	[lîn̥ ^h]	<ḥṇ̥>	'wind'
/mîn/	[mîn̥ ^h]	<ṇ̥ṇ̥>	'to sleep'

¹Nasalisation is here treated as a suprasegmental or prosodic modification of the vocalic segment of the syllable, but for convenience it is transcribed in phonemic script as a final consonant /n/. Actually, it would be possible to interpret this phenomenon as a phonemic final consonant /ŋ/, for nasalised vowels are, in fact, sometimes pronounced with a terminal lenis velar nasal. Nasalisation of the preceding vowel could then be considered as an allophonic feature conditioned by the presence of syllable final /ŋ/. Such a handling of nasalisation would reflect the actual historical development of this phenomenon from earlier syllable-final nasal consonants. We have, however, preferred the more traditional suprasegmental analysis.

/lâ/	[lâ]	<ล>	'to be warm'
/ná/	[nâ]	<น>	'odour'
/lâ/	[lâ]	<ล>	'to go'
/mi/	[mî]	<ม>	'fire'

Since unambiguous phonemic nasalisation is consistently characterised by accompanying change of vowel quality, we have a basis for analysing certain other phonetically nasalised forms as phonemically unnasalised. These involve the vowel /ɛ/ and the diphthong /ai/:

/ɛ/ is optionally nasalised following /h/: /hê/ [hễ ~ hễ̃] <แฮ> 'what?, huh?'. Elsewhere it is phonetically unnasalised: /khe/ [khẽ̃] <แค> 'bitter', /ʔɛ/ [ʔɛ̃̃] <เอ> 'many'.

/ai/ is always phonetically nasalised following /ʔ/: /ʔai/ [ʔaĩ̃] <ไอ> 'to bite', /bânʔai/ [bânʔaĩ̃] <บ้านไ> 'Ban Ai' (from Thai บ้านไฉ่น /bâan ʔɛ̃̃n/, the name of a town). Elsewhere it is phonetically unnasalised: /tâi/ [tâĩ̃] <ไ> 'to create'.

2.3.4 Glottalisation

All mid and low vowels, and all diphthongs may be glottalised.¹ That is, these vowels and diphthongs may be terminated by an abrupt glottal closure - in much the same way that Thai syllable-final short vowels are pronounced in isolated syllables or when read slowly. However, before syllables without initial consonants, glottalisation has the effect of glottal friction or constriction of the preceding vowel rather than of complete closure.

Glottalisation sometimes has the effect, also, of altering the pronunciation of the vowel or diphthong with which it occurs (Fig. 6). When it occurs with the vowel /e/, the vowel is always pronounced with a higher vowel offglide. In a partially similar fashion, the vowel /o/ has a slightly higher offglide when glottalised than when plain. Also, the first vowel of the diphthong /ai/ is usually pronounced higher and further forward when glottalised, while the first vowel of /au/ is

¹Glottalisation is here treated, in effect, as a suprasegmental or prosodic modification of the vocalic segment of the syllable with which it occurs. For convenience, it is transcribed in this paper as a final consonant /ʔ/. Like nasalisation, this phenomenon could be considered to be a phonemic final consonant, and this too would reflect the historical development of glottalisation from earlier stop finals. In either case, this feature would be considered a phonemic entity. There is a third alternative, that of treating glottalisation as a subphonemic feature of tone, but this solution would seem less satisfactory than the other two because of its significance as a conditioning element in phonetic vowel alternations, as a feature which imposes certain restrictions on possible syllable shapes, and because there is probably some virtue in handling glottalisation in a parallel fashion to nasalisation - whether as a final consonant, or as a prosodic (but not tonal) modification of the vowel.

pronounced higher and further back.

Glottalisation and nasalisation never cooccur.

2.4 STRESS, INTONATION AND JUNCTURE

Stress. All syllables must have either weak stress (in the case of preposed syllables) or normal stress. Then in addition, all utterances must have at least one phrase or sentence stress which is superimposed on a normal syllable, causing the syllable in question to be pronounced with slightly more loudness and duration than other adjacent syllables not accompanied by such stress. This stress is here indicated phonemically by the symbol /'/ written immediately after the stressed syllable. The following are examples of words, phrases, and sentences characterised by phrase or sentence stress: /gankhu'/ < 땅 > 'earth', /gankhukhu'/ < 땅 > 'upon the earth', /kəchán'/ <ช้าง> 'elephant', /kəchánphu'/ <ช้าง > 'elephant calf', /phiôn|lôn'gê/ < โพล่งหลังแม่ > 'four Phlong (Phlong four persons)', /nəgégəcai'-â/ < น-เผ่ใจ-อ้า > 'Did you come to visit? (you come walk huh?)'.

Intonation. Normal intonation involves little that is immediately obvious in the way of pitch or tone modification. However, there are two special types of tonal modification which usually affect the syllable bearing the main sentence stress. These are raised intonation, and rising intonation. Both types are associated with some sort of emphasis, but the exact conditions under which they occur are not yet clear. It does appear, however, that in any given utterance, both the permissible placing of special intonation and the kind of intonation used (whether raised or rising) are predictable. Further, both types of intonation may occur with a variety of open syllables, and perhaps also with glottalised syllables; and both are characterised by loss of tonal contrast in the case of the affected syllable (Fig. 7).

Raised intonation /!/ causes the syllable in question to be pronounced with extra high, level pitch, and is associated with major emphasis: /sín!yâu?/ < ชีงเหีย! > '(he) is DEAD! (literally: DIE already)'; /ləbethə̀nàn'mênbe/ [...nán'...] < ล-แบบเถื่อนนางเม่งแบบ! > 'It doesn't matter at all! (lit. not is thing ANY kind not)'; /lùn'!ô/ [lún'...] < หลุ่งโ้! > 'way over there! (AT there)'.

Rising intonation /↑/ is characterised by rising pitch, being approximately the mirror image of falling tone; and it is associated with casual or minor emphasis: /cai'↑/ < ใจ! > '(Just) strolling' (in answer to the question "Where are you going?"); /khè'↑/ < แซ่! > '(It's just) a chair'; /chê'↑/ < แซ่! > '(Oh yes, it) hurts (sure enough)'; /khê'↑/ < แซ่! > '(Oh yes, it's) expensive (all right)'; /ʔanmîgôn'↑yâu?/ < อางมีดองเหีย! >

'(I'm) all finished eating (lit. eat rice finished already)').

Exclamation mark is used in the proposed orthography for both forms of intonation, and the symbol is placed at the end of the clause or phrase in which the affected syllable occurs.

Juncture. It is possible to distinguish at least four types of juncture:

1. Close juncture (unmarked) is characterised by normal transition between syllables. All examples given under the heading of *Stress* above in this section involve syllables that are linked together with close juncture. That is, the syllables are uttered without clearly discernible intervening pauses.

2. Space juncture (marked in phonemic transcription by space between syllables) is characterised by a slight pause or break between syllables: /yê' cəməlî' / <แม่จ-ม-ลี> 'I'll go (me I will go)'; /nəphu' ?ɔ'-â / <น-พู่จ-อ-อ้า> 'Do you have any children? (you children have huh?)'.

3. Pause juncture (indicated by a comma) is characterised by a slightly longer and more obvious break or pause than occurs with space juncture: /gùn?ə?î'n'no, məbâisî'n' ləgəyɛ?î'n' / <หูกงอ-ฮังนอ ม-ไบฮั้ง ล-แม้นัยฮั้ง> 'This snake [pause] will crush this man'; /me??antəsin?ə?î'n', ?əwéməblɛ'yâu? / <เหมะ-อาจตฮังอ-ฮั้ง อ-เว้ม-แบลเฮ้า> 'If he takes this medicine [pause] he will recover'.

4. Final juncture (indicated in phonemic transcription by a period) occurs in sentence final position (see sentences given as examples for space and pause juncture above).

In representing the various types of juncture orthographically, space juncture is ignored except in primer materials. Both close and space juncture are transcribed by running syllables together, as in Thai writing. Final juncture, as in Thai, is indicated by spacing between sentences. Pause juncture is often represented by spacing between syllables. However, as in Thai, important divisions in the sentence are marked on a syntactic basis rather than a phonological one - though syntactic and phonological divisions within the sentence will often turn out to coincide.

2.5 MORPHOPHONEMIC PHENOMENA

The majority of Phlong morphemes are monosyllabic forms, and these usually comprise normal syllables; a number of single preposed syllables also occur as distinct morphemes. There are, however, also quite a number of disyllabic and trisyllabic morphemes, many of which are either borrowed, or are traceable to earlier historically segmentable forms.

The most common polysyllabic morpheme shape consists of a preposed syllable followed by a normal syllable. Any syllable of a polysyllabic morpheme other than the last may be a preposed syllable. The following words are examples of polysyllabic morphemes: /kəcháŋ/ <กช้าง> 'elephant', /dêʔbân/ <เดะบ้าน> 'centipede', /láŋkəthaʔ/ <ลำงกทะ> 'vulture', /məlekliê/ <มแลกลี> 'forest', /məŋəhoʔ/ <มนนโห> 'hell' (from Myang /mɔ́w nahók/ 'hell'), /phíndónkhê/ <พ้งดองแค> 'ogre', /nəlike/ <แนลึเก> 'clock, watch' (from Myang /naalíkəə/, Thai นาฬิกา /naalikaə/ 'watch').

There is little morphophonemic alternation when morphemes are juxtaposed in normal speech. Such alternation as does occur is usually associated with particular morphemes or combinations of morphemes. Alternations are of two kinds, reduction and contraction.

In the case of certain morphemes, normal syllables may be reduced to preposed syllables. Apart from the examples listed below, this phenomenon is comparatively rare:

/bì/ <บ> ~ /bə/ <บ-> 'manner', as in /bìŋə/ <บีน> ~ /bəŋə/ <บ-น> 'like that'. This alternation is optional in most occurrences of the morpheme /bì/.

/phì/ <ผ> ~ /phə/ <พ-> 'place'. The form /phə/ <พ-> always appears preceding the question particle /lê/ <เล>, as in /phəlê/ <พ-เล> 'where?'; the form /phì/ <ผ> usually occurs elsewhere.

/thə/ <เท> ~ /thə/ <ท-> 'thing'. The form /thə/ <ท-> appears in rapid speech when this morpheme is used as a derivational noun marker, as in /thəgí/ <ท-ดี> 'goodness' (from /gí/ <ดี> 'good'); /thə/ <เท> usually occurs elsewhere.

3. ORTHOGRAPHY

The Thai symbols used representing Phlong phonemes are listed alphabetically from top to bottom in Figs. 9, 10, and 11. In these charts, items enclosed in parentheses are those which have been especially adapted for use in Phlong, and are used with unexpected values or in unexpected combinations. In Fig. 9, the letters M, H, and L identify the consonants in question as belonging to middle, high, and low classes respectively (classification being made on the same basis as in the Thai system of writing [Appendix 2]). The Thai alphabetical ordering of consonant symbols has been retained, but some adaptation in the vowel order has been made in favour of a more systematic presentation. In Figs. 10 and 11, spaces in the charts marked by a dash indicate combinations which do not occur in Phlong. In Fig. 10, all examples of forms with final consonant involve <ŋ>, the symbol used for representing nasalisation of the preceding vowel. These are included in the chart

because (as in Thai writing) final consonants occasionally necessitate special consideration in spelling and alphabetisation. Fig. 12 spells out the theoretical range of vowel, tone, and consonant class combinations in detail.

Initial Consonants

<i>Consonant</i>	<i>Class</i>	<i>Phonemic value</i>	<i>Consonant</i>	<i>Class</i>	<i>Phonemic value</i>
ก	M	k	บ	M	b
ข	H	kh	ป	M	p
ค	L	kh	ผ	H	ph
ง	L	ŋ	พ	L	ph
จ	M	c	ฝ	H	f
ฉ	H	ch	ฟ	L	f
ช	L	ch	ม	L	m
ซ	L	s	ย	L	y
(ฌ)	L	ʒ	ร	L	r
(ฌ)	L	x	ล	L	l
ด	M	d	ว	L	w
ต	M	t	ส	H	s
ถ	H	th	ห	H	h
ท	L	th	ฮ	L	h
น	L	n	อ	M	?
			(-อ)	M	-

Digraphs

สย	sy
ชย	sy
นย	ñ

Final Consonant

-ง	nasalisation
----	--------------

Consonant Clusters

กย	กร	กล	กว	ky	kr	kl	kw
ขย	ขร	ขล	ขว	khy	khrr	khll	khw
คย	คร	คล	คว				
			จว				cw
			ฉว				chw
			ชว				
			ซว				sw
			ลว				
			ฌว				xw
			ตว				dw
ตร	ตว			tr			tw

Fig. 9 - continued on next page

			ถว				thw
			ทว				
			นว				nw
ปย	ปร	ปล	ปว	py	pr	pl	pw
ผย	ผร	ผล	ผว	phy	phr	phl	phw
พย	พร	พล	พว				
มย	มร	มล	มว	my	mr	ml	mw
			ยว				yw
ลย			ลว	ly			lw
หย			หว	hy			hw
			อว				?w

Fig. 9. Phlong consonant symbols

Symbol without final consonant	Symbol with final consonant	Phonemic value	EXAMPLES		
zero		ə	<กช้าง>	/kəʃán/	'elephant'
-ะ		ə	<กะล่าง>	/kəláŋ/	'python'
-1		ə	<จ- >	/cə/	'I, my'
-อ		ɔ	<ท้อ>	/thɔ́/	'tall'
	-อง	ɔn	<ล้อง>	/lɔ́n/	'to chase'
-ะ		aʔ	<นะ>	/náʔ/	'to count'
-า		a	<ช้า>	/sá/	'three'
	-าง	an	<ล่าง>	/láŋ/	'to descend'
๒		i	<ลี>	/lí/	'to go'
	๒ง	ín	<อึ่ง>	/sín/	'to die'
๒อ		ɨ	<ท้อ>	/phɨ/	'short'
	๒ง	ɨn	<หลึ่ง>	/lɨ́n/	'to nourish'
๔		u	<ดู>	/du/	'large'
	๔ง	un	<ผู้>	/jún/	'to fly'
๕-		e	<เฒ>	/gè/	'to come'
	๕-ง	en	<เฒ่ง>	/dèn/	'with'
๕-อ		ə	<เฒ่อ>	/thè/	'thing'
	๕-ง	ən	<เฒ่ง>	/thèn/	'ant'
๕-อะ		əʔ	<ได้อะ>	/dôʔ/	emphatic particle
๕-ะ		eʔ	<เคะ>	/khêʔ/	'instead of'
๕-า		au	<เมยา>	/myau/	'fermented tea'
๕-า		auʔ	<ดี้า>	/dâuʔ/	'house'
๕-าะ		ɔʔ	<เลาะ>	/cɔʔ/	'dipper'

Fig. 10 - continued overleaf

¹The hyphen here represents the symbol used in the orthography, not (as in the other cases) the position of the consonant.

เ-ะ		aɪ?	<เหมะ>	/maɪ?/	'comfortable'
แ-		ɛ	<แม>	/mê/	'to make'
แ-ะ		ɛ?	<เหมะ>	/mɛ?/	'goat'
โ-		o	<โฮ>	/jô/	'this'
	โ-ง	on	<โหม>	/nôn/	'horn'
โ-ะ		o?	<โห>	/kô?/	'to call'
เ-		ai	<เโ>	/ʔai/	'bite'
เ-ะ		ai?	<เโ>	/câi?/	'to say'

Fig. 10. Phlong vowel symbols

Tone symbols	Syllable types	Middle class consonants	High class consonants	Low class consonants
(no symbol)	Open	กา /ka/	--	คา /kha/
	Glottalised	กะ /kaʔ/	ขะ /khaʔ/ หะ /laʔ/	คะ /khâʔ/
'	Open	ก่า /kà/	ข่า /khà/ ห่า /là/	ค่า /khâ/
	Glottalised	--	--	--
~	Open	ก้า /kâ/	--	ค้ำ /khá/
	Glottalised	--	--	--
~	Open	ก้า /ká/	--	--
	Glottalised	ก๊ะ /kâʔ/	--	--

Fig. 11. Orthography for representing Phlong tones

		a	à	â	á	a?	â?
MCC	/i/	กึ	กึ	กึ	กึ	-	-
	/in/	กึง	กึง	กึง	กึง	-	-
	/ɪ/	กึอ	กึอ	กึอ	กึอ	-	-
	/ɪn/	กึง	กึง	กึง	กึง	-	-
	/u/	กู	กู	กู	กู	-	-
	/un/	กูง	กูง	กูง	กูง	-	-
	/e/	เก	เก	เก	เก	เกะ	เก๊ะ
	/en/	เกง	เกง	เกง	เกง	-	-
	/ə/	เกอ	เกอ	เกอ	เกอ	เกอะ	เก๊ะ
	/ən/	เกิง	เกิง	เกิง	เกิง	-	-

Fig. 12 - continued on next page

		a	à	â	á	a?	â?
MCC	/o/	โ	โ	โ	โ	โ	โ
	/on/	โง	โง	โง	โง	-	-
	/ε/	แ	แ	แ	แ	แ	แ
	/εn/	-	-	-	-	-	-
	/a/	กา	กา	กา	กา	กะ	กะ
	/an/	กา	กา	กา	กา	-	-
	/ɔ/	กอ	กอ	กอ	กอ	เกา	เกา
	/ɔn/	กอ	กอ	กอ	กอ	-	-
	/ai/	ไ	ไ	ไ	ไ	ไ	ไ
	/a+ /	-	-	-	-	เก	เก
	/au/	เกา	เกา	เกา	เกา	เกา	เกา
HCC/ LCC	/i/	ท	ท	ท	ท	-	-
	/in/	ทง	ทง	ทง	ทง	-	-
	/ɪ/	ทอ	ทอ	ทอ	ทอ	-	-
	/ɪn/	ทง	ทง	ทง	ทง	-	-
	/u/	บู	บู	บู	บู	-	-
	/un/	บู	บู	บู	บู	-	-
	/e/	เท	เท	เท	เท	เถ	เถ
	/en/	เท	เท	เท	เท	-	-
	/ə/	เทอ	เทอ	เทอ	เทอ	เถอ	เถอ
	/ən/	เทง	เทง	เทง	เทง	-	-
	/o/	โ	โ	โ	โ	โ	โ
	/on/	โง	โง	โง	โง	-	-
	/ε/	แ	แ	แ	แ	แ	แ
	/a/	ทา	ทา	ทา	ทา	ทะ	ทะ
	/an/	ทา	ทา	ทา	ทา	-	-
	/ɔ/	ทอ	ทอ	ทอ	ทอ	เกา	เกา
	/ɔn/	ทอ	ทอ	ทอ	ทอ	-	-
	/ai/	ไท	ไท	ไท	ไท	ไ	ไ
	/a+ /	-	-	-	-	เก	เก
	/au/	เกา	เกา	เกา	เกา	เกา	เกา
	/i/	ล	ล	ล	ล	-	-
	/in/	ล	ล	ล	ล	-	-
	/ɪ/	ลอ	ลอ	ลอ	ลอ	-	-
	/ɪn/	ล	ล	ล	ล	-	-
	/u/	ลู	ลู	ลู	ลู	-	-
	/un/	ลู	ลู	ลู	ลู	-	-
	/e/	เล	เล	เล	เล	เหล	เหล
	/en/	เล	เล	เล	เล	-	-

Fig. 12 - continued overleaf

		a	à	á	á	a?	á?
HCC/ LCC	/ə/	เลอ	เหล่	เล่	เล้อ	เหลอะ	เลอะ
	/ən/	เลิง	เหลิง	เล้ง	เล้ง	-	-
	/o/	โล	หล่	โล่	โล้อ	หลอะ	โลอะ
	/on/	โลง	หล่อง	โล้ง	โล้ง	-	-
	/ɛ/	แล	เหล่	เล่	เล้อ	เหลอะ	เลอะ
	/ɛn/	-	-	-	-	-	-
	/a/	ลา	หล่า	ล่า	ล้า	หละ	ละ
	/an/	ลาং	หล่าง	ล่าง	ล้าง	-	-
	/ɔ/	ลอ	หล่อ	ล่อ	ล้อ	หลอะ	ลอะ
	/ɔn/	लों	หล่อง	ล่อง	ล้อง	-	-
	/ai/	ไล	หล่	ไล่	ไล้อ	หลอะ	ไลอะ
	/aɪ/	-	-	-	-	หละ	ละ
	/au/	เลา	เหล้า	เล้า	เล้า	เหล้า	เล้า

Fig. 12. Chart of theoretically possible vowel and tone combinations with middle, high, and low class consonants

3.1 PROBLEMS OF ADAPTING THAI SCRIPT TO PHLONG

Four basic considerations underlie the proposed adaptation of the Thai script for use in transcribing Phlong. These are: 1) the principle of maximum transferability from the proposed script to actual Thai writing; 2) the need for as much consistency and simplicity as is commensurate with maximum transferability; 3) the avoidance of solutions which strongly go against Thai orthographic patterns wherever this is possible; 4) the availability of symbols on a standard Thai typewriter.

The consonants <ฅ> /g/ and <ฆ> /x/

The symbols <ฅ ฆ> have been chosen to represent the phonemes /g/ and /x/ respectively. Since these phonemes do not occur in Thai, it is necessary to take some little-used Thai symbol and give it a new value. <ฅ ฆ> (usually used to represent Thai /ch kh/) were arbitrarily chosen to represent these new phonemes because their articulation was somewhere near the Phlong sounds. However, these symbols represent low class consonants which do not take a preceding <๗> for changing tonal rules in Thai, although they have been made to do so in Phlong before low tone vowels and before glottalised mid vowels. Thus a Thai orthographic

principle has been extended to symbols with which it is not used in Thai.¹

The consonant <ร> /r/

The phoneme /r/ exists only in a few words in the Phlong mountain dialect. In such words, speakers of the plains dialect pronounce /l/ for /r/. It is here proposed that all such words be spelled with <ร>, since plains Phlong would have no difficulty learning to read /l/ for both <ล> and <ร>. The opposite procedure of learning to write <ร> for /l/ in certain words would perhaps be more difficult, but would constitute no major problem, since mountain Phlong /r/ words are in any case rather rare, and would probably be known to most plains people as mountain Phlong /r/ words (though not so pronounced by plains speakers), for there is continual communication between the two dialects.

Zero-initial consonant

Since the Thai writing system demands that all syllables begin with a consonant symbol, this absence of a phoneme is represented by a hyphen plus the symbol <อ>; for example, <-ฮอ> /-â?/ 'him'; <-อฮ> /-ê/ (a particle); <-อฮ> /-ê/ (vocative particle). Note that in syllables such as the last two examples above, the hyphen is placed at the very beginning of the syllable, not between the vowel and <อ>. This is done to avoid such odd-looking combinations as <อ-ฮ>, <อ-ฮ>, etc., which go too much against the normal patterns of Thai orthography.

Consonant clusters

Clusters are much more numerous in Phlong than in Thai, where clusters with /y/ as second member are entirely lacking, and clusters with /r/, /w/, and /l/ are much more limited than in Phlong (Section 2.2). However, Thai provides a precedent for recording clusters simply by juxtaposing the two consonants in question, and treating the two as a unit when writing vowels and tones which cooccur with them. This precedent is here expanded to include the greater variety of Phlong clusters.

The possibility of writing clusters with /y/ as if the /y/ were comparable to Thai diphthongs in which /i/ is followed by /a/ or /w/ was at one time considered. Thus /myau/ <เมย> 'fermented tea' (from Myang

¹Since /g/ and /x/ often occur preceding low tone vowels, at one point we considered using <ก ฎ> which are middle class consonants in Thai and therefore do not present this problem. The transfer value would have been higher. However, these consonants present a particular difficulty in that because they extend below the line, they interfere with the printing of <ร> Phlong /u/, when it would occur with them, and would cause considerable inconvenience.

/mʔaŋ/ 'fermented tea') might, for example, be written <เมืง> (i.e. /miaw/ from a Thai reader's point of view); and /syewile/ <เยืยวืล> 'to waste time' (from Myang /sʔa weelaa/, Thai เสียเวลา 'waste time') might be written <เยืยวืล> (i.e. /sia wiileɛ/ in Thai); and /khyu/ <คฺย> 'cord-wood' (from Myang /khiw/ 'arranged in rows') could be spelled <คฺว> (i.e. /khiw/ in Thai). However, this expedient introduces several anomalies into the orthography, and accommodates only a few words containing /y/ clusters. It also encourages a transfer between Phlong and Thai which, though perfectly natural and acceptable when Thai words are borrowed into Phlong, would be unacceptable if carried over into the reading of actual Thai words. It seems best, therefore, to write Karen /y/ clusters like other clusters merely by juxtaposing initial consonant and <y>.¹

The digraphs <ny> and <sy>

These combinations are used to represent the phonemes /ny/ and /sy/ respectively. It would, of course, be possible to choose rare unitary symbols to represent these phonemes (as was done in the case of /g/ and /x/), but this would decrease transfer value, besides raising the problem of how to represent these consonants when they occur preceding all four possible tones. By writing these phonemes as clusters are written, both problems are avoided without loss of phonemic contrast.

Vowels and diphthongs

In general, plain vowels are represented in the orthography by the symbols for corresponding Thai long vowels; nasalised vowels are represented by long vowel plus the consonant symbol <ɲ> in syllable-final position, and glottalised vowels are transcribed by means of the symbols for corresponding Thai short vowels. In the case of glottalised vowels, since these occur on only two tones, it seems simple, natural, and unambiguous to transcribe falling-tone glottalised vowels as if they were Thai high-tone short vowels, and mid-tone as if they were Thai low-tone short vowels.

Nasalised vowels

These are represented by the final consonant symbol <ɲ> /ŋ/. It

¹One development which will doubtless bring complications both to the vowel system and to the consonant cluster system in time comes from rapidly accelerating borrowings from Northern Thai which are not now as fully assimilated as old borrowings were. Four Northern Thai words in /Ciaŋ/ (C = consonant) were borrowed into Phlong as /Cyaw/, giving the only Phlong words of that combination so far recorded. Now, however, Northern Thai words in /Ciaw/ are being used by Phlong speakers in the areas of Thai contact, thus beginning a Phlong pattern /Ciaw/ which, if it spreads will give a new diphthong.

seems best to use a nasal consonant symbol to represent nasalisation, since other possible symbols (such as unused vowel or superscript signs) have minimal transfer value; and of the three Thai nasal consonants <๑ ๒ ๓>, <๑> is articulated most nearly like Phlong nasalised vowels. Also the consonant <๑> is the symbol least likely to lead to confusion concerning syllable division, for /ŋ/ is rare in Phlong, and seldom occurs as the first member of a consonant cluster.

Plain and glottalised diphthongs

These present a more difficult problem than simple vowels. In the first place, the Phlong glottalised diphthongs /aiʔ/ and /auʔ/ cannot be represented simply by the corresponding Thai symbols <๑> or <๑> and <๑-๑> without loss of transfer value. This is so because the Thai symbols follow open-syllable tone rules, whereas the Phlong segments are "closed" from a Thai point of view (because they are glottalised) and therefore need to follow closed-syllable tone rules. The simplest solution seems to be to add a special short-vowel indicator to the Thai symbols, using <๑-๑> to represent /aiʔ/, and <๑-๑> to represent /auʔ/, both combinations being treated as closed syllables with tonal rules identical to those of simple Thai short closed vowels. Then, in order to achieve maximum simplicity, plain diphthongs are represented by the symbols <๑> and <๑-๑> rather than by the long vowel sequences <-๑๑> and <-๑๑>. This expedient avoids the introduction of the additional final consonant symbols <๑> and <๑>. It also links plain and glottalised diphthongs together in a logical way by using comparable symbols for each, and it provides a treatment that is consistent with the handling of other plain v. glottalised segments.

The Phlong glottalised diphthong /aʔ/ presents an additional problem because Thai has no comparable combination; it therefore becomes necessary either to give some existing symbol or combination of symbols a new value, or to create a new combination which does not exist in the Thai orthography. One solution might have been to use <๑-๑>, because <๑>, which represents /ay/ in present-day Thai, formerly represented /aʔ/, as it still does in Tay Yay (Shan) and some dialects of Lao. Because the symbol is so common in Thai, however, this usage would have caused considerable interference in transfer situations. Instead, we have proposed using the combination <๑-๑>. This appears ideal in that it presents no transfer problem, for this combination does not exist in the Thai orthography; yet the proposed transcription is sufficiently like the Thai combination <๑> /əə/ or <๑-๑> /əʔ/ to suggest a sound not far removed from the actual phonetic value of Phlong /aʔ/.

Unstressed vowel

/ə/ was described in detail in section 2.3.1. It is comparable in some ways to the Thai short unstressed syllable-final vowel /a/ (in Thai writing spelled <๕>, or left unwritten). Both are short and unstressed; both have much the same vowel quality; and both occur on a non-contrastive "mid" tone, Thai (spoken language) very often, and Phlong invariably. However, Thai /a/ differs from Phlong /ə/ in that the Thai vowel may also be pronounced with various tones (albeit with peculiar limitations and alternations). In addition to the non-contrastive mid tone it also occurs with low and high tones (chiefly, but not entirely as reading or citation variants of spoken mid tone forms, and usually, but not always, pronounced with final glottal stop), and, much more rarely, with falling tone. In fact, unless tones are otherwise marked, the writing system implies theoretical low or high tone. Also, the Thai /a/, unlike Phlong /ə/, stands in contrast to other short vowels (chiefly /i/ and /u/) which may be similarly unstressed and may occur with similar distinctive tonal variations and restrictions.

The Thai writing system for Phlong here follows the Thai as closely as possible. When /ə/ occurs as the presyllable of a morpheme, and has no independent morphemic status itself, it is transcribed in one of two ways, as in Thai. No vowel is written at all if the resulting orthographic cluster will not be confused with an actually occurring phonemic consonant cluster, as in Thai <สบาย> /sabaay/ 'comfortable'. If the lack of a symbol for /ə/ makes for a possibility of confusion with a phonemic consonant cluster, it is recorded with <๕> as in Thai <กะล๑> /kalaa/ 'coconut shell'. Thus, /pə̀nə̀/ 'buffalo' is transcribed as <ป๑น๑> but /kalān/ 'python' is transcribed <กะล๑น> in order to contrast with /klān/ <กล๑น> 'to slash'.

In preclitic morphemes unstressed /ə/ is written with the hyphen <-> after the consonant. The words /cə̀/ <๑- > 'I', /khə̀/ <๑- > 'we', /ʔə̀/ <๑- > 'it', /nə̀/ <๑- > 'you', /lə̀/ <๑- > 'one', /mə̀/ <๑- > 'will' are sprinkled all through the text.¹

¹Originally these words were written as individual consonants separated from the following word by space <๑ ๑>. When the words are run together with normal Thai spacing this creates problems in addition to the fact that it is un-Thai. Non-Thai combinations are created like <๑๑๑> for <๑-๑> /cə̀cə̀/ 'my older brother', or the combination may be ambiguous like <๑๑> for <๑-๑> which would most likely be read as /khlun/ 'oyster' instead of /khə̀lun/ 'our yarn'. Using <๕> does not solve the problem either, as it would be ambiguous with /aʔ/ as <๑๕> for <๑-๕> would be read as /khaʔthu/ 'shoot bird' instead of /khə̀thu/ 'our bird'. <๑-๑> Thai /ə̀/ was also tried, but proved to be too cumbersome for morphemes occurring so frequently. It also has the disadvantage of not showing the contrast between /ə̀ ə̀/.

Tones

All tones on open syllables are recorded exactly as in Thai, being signalled by a combination of consonant class and tone symbol. Tones in glottalised syllables are basically treated according to short vowel rules, except that Phlong mid and falling glottalised syllables are transcribed as if they were Thai low and high tone closed syllables respectively. The equating of Phlong mid with Thai low tones, and of Phlong falling with Thai high tones, in representing glottalised syllables, is probably of no significance as an obstacle to Phlongs either in learning this orthography, or later switching to Thai. It is more than likely, in fact, that rules for reading the tones of glottalised syllables would in any case have to be learned quite independently of rules for reading the tones of open syllables. Be that as it may, there is no danger of ambiguity in reading Phlong glottalised syllables.

Punctuation and other writing devices

Spacing between syllables, words, and larger segments is basically as in the Thai writing system. Syllables and words belonging together in unified phrases or clauses are run together. Spaces are used to represent breaks between sentences, and also major syntactic breaks within sentences.

Contraction and reduction. In as far as Thai orthography will allow, reduced or contracted forms are written as pronounced, in accordance with the degree of formality or informality to be conveyed; that is, the greater the formality, the less the use of reduced or contracted forms. Since Thai orthography requires an initial consonant for every syllable, any contraction which removes a syllable-initial consonant cannot be transcribed.

Punctuation symbols. Most of these are unnecessary. Features ordinarily marked by comma, semicolon, or period in English, are usually adequately handled by spacing and particles. Question marks are unnecessary since all questions in Phlong are syntactically marked by particles. Exclamation marks are needed to indicate intonation associated with emphasis. It is possible that colons will be useful, and probably also quotation marks.

Other symbols. The only other symbols proposed here are the Thai numerals (and probably also English numerals, since these are also used in Thai writing), and the repeat sign ๗. The latter symbol could well be used for expressions such as <๗ ๗> /p'í p'í/ 'little', <๗๗ ๗> /kyô kyô/ 'slowly', and many others.

3.2 TEXT

Here follows a sample text, illustrating the orthography.

1. พุขวิ ออ เต่ง อ- ฟัง.
 phuxwí ?ɔ̀ dèŋ ?ə phín
orphans live with their grandma
Two orphans were living with their grandmother.
2. ลี เพะ
 lì phê?
go slash
They went
3. ต้าง ผู้่ง หรี
 dân phùn wí
relator younger sibling older sibling
The two brothers went to weed their
4. อาง เขะ หลุ่ง เกล.
 ʔan xə+? lùŋ klê
field by path
to make fields by the path.
5. ค้าง แม่ ลี แม่ นาง แฉ ฉ่อ แฉ ฉ่อ.
 khín mē lî mē nan ʔɛ ʔwí ʔɛ ʔwí
two persons go do weeds evening morning evening morning
field every day.
6. ต้าง ผู้่ง หรี ค้าง แม่ เพะ นาง เตอะ ออ
 dân phùn wí khín mē phê? nan də? ?ɔ̀
brothers two persons slash weeds part. to-be-located
The two brothers came to weed their field, and were there (when)
7. เตอะ ออ ไร๋ ซ้างมา่ง หลุ่ง ไร๋ อ- พู ช้าง กเต้าะ.
 də? ?ɔ̀ ?ô sǎnmǎŋ lùŋ ?ô ?ə phu sǎŋ kədǎ?
part. be there Ruler over there his son died again
the Ruler's child died.
8. โพล่ง ลี แม่ แท้ -แอ.
 phlôn lî mē thê -ê
people go do songs emphatic-part.
People went to sing.
9. "แควจ้อ พุขวิ -เอ้อ
 "khwécǎ phuxwí-ê
"Mr orphans vocative
"Orphans are you going
10. ลี แม่ แท้ -อ้า"
 lî mē thê-â"
go make song?"
to sing?"
11. "ค- เว้ ค- แม่ แท้ ล- ชี -แอ"
 "khə wé khə mē thê lə si-ê"
"as-for us we make songs not able emphatic part."
"As for us, we can't sing,"
12. ไล้ เว้.
 cáí? wé.
said they.
they said.
13. "อ้า ลี-แอ"
 "â, lî-ê".
"interjection go! part."
"Come on; let's go!"
14. ต้าง ผู้่ง หรี เพะ นาง
 dân phùn wí phê? nan
brothers slashed weeds
The brothers kept on weeding

- เขริะ ๗. 10. "ลั แลเส้า -แอ" 11. ค- เว้ ค-
 khre+? khre+?. "lî ləthəu?-ê khə wé khə
 continuously "go imperative part. we ourselves we
 continuously. "Go! As for us, we
- แม่ แท้ ล- ชี แบ. 12. แม่ แท้ ล- ชี หน้า พอลง"
 mē thē lə si be. mē thē lə si nān phlon."
 make songs not able not make songs not able any one (clf.)"
 can't sing. We can't sing even one song."
13. โพล่ง เฒ ล- มั่ง อาจจ๊ะ เฒ ล- มั่ง อาจจ๊ะ
 phlôn gē lə mún ?ancā?, gē lə mún ?ancā?,
 people come one group ask come one group ask
 People came, group after group, and invited them to go.
14. ออ ออ เดอะ โพล่ง ลั พ่อง
 ?o ?o də? phlôn lî phôn,
 to-be-located to-be-located part. people go past tense
 After the people all left,
15. "มั่ง ปะเ ไร่ อาจจ๊ะ พัง บ่อ. 16. ค-
 "phún pāi? thāi ?ancā? phín bō. khə
 "sibling young second return ask grandma part. we
 the older brother said, "Younger brother, let's go back and ask
- ม- ลั แม่ แท้" ไร่ เว้ 17. "เอ ไร่ ไร่
 mə lî mē thē" cāi? wé "ē thāi thāi
 will go make songs", said he "excl. return return
 grandmother if we can go sing." "O.K., sure thing, let's go
- เล่อ เน่ หี่ จ้อ". 18. ไร่ หวะ! ดำผุ่นหี่
 sò nē wì cō". thāi wai?! dânphúnwì
 of-course you older first-sibling return straight brothers
 back, older brother." The two brothers went right
- คั้ง แฉ 19. "คั้ง ค- ม- ลั แม่ แท้ -อ้อ".
 khín gē "phín khə mə lî mē thē -ō".
 two persons "Grandma we will go make song part.?"
 back. "Grandmother can we go sing?"
20. "ลั ล- ฉี่ พุขวิ 21. น- ชิง ไซ้ ล- ฉี่
 "lî lə gī phuxwī nə sin chái lə gī
 "Go not good orphans. you pl. shirts not good
 "Don't go, orphans. Your clothes are not good.

CHAPTER EIGHT

MIEN (YAO)

LOIS CALLAWAY AND C.W. CALLAWAY

The Mien are one of the Yao (佤) peoples residing in South China, Vietnam, Laos and Thailand. Yao language is grouped with the Miao (Chapter 4) as constituting a language family (Haudricourt 1954; Purnell 1970; Purnell (ed.) 1972), which may be part of what Benedict has recently proposed as a huge Austro-Thai stock (Benedict 1968).

No accurate figure for total Yao population is available. The estimates range from one million (*Encyclopedia Britannica* 1963:876) to three or four million estimated by Summer Institute of Linguistics research (personal communication). The number of Mien in Thailand is estimated at 15,000 to 18,000 in Chiang Rai, Chiang Mai, Lampang and Nan Provinces with the greater concentration being in Chiang Rai Province along the Laotian border. We estimate over 5000 in this area.¹

Although there are several distinct languages and dialects of Yao, only Mien is spoken in Thailand, a single language with minor differences in pronunciation both regionally and individually.²

Missionary study of the Mien language in Thailand was begun early in the 1950s by Mr and Mrs Eric Cox, Sylvia Lombard and Mary Baldock in the area of Mae Chan, Chiang Rai. We began about the same time in the Tung and Chiang Kham areas of Chiang Rai Province. As a result of this work, two different writing systems were devised for Mien in Thailand,

¹Young 1962:85 estimates 10,000 Yao for Thailand. See also LeBar *et al.* 1964:63-4, 91-3. See also the note at the end of the chapter.

²On the Mien language see Downer 1961; Lombard and Purnell 1968; Purnell 1965, 1970.

one using Western letters and one using Thai.

Between April 1963 and May 1964 Herbert C. Purnell, Jr., did a systematic analysis of Mien phonology in the Mae Chan area, which culminated in the publication of his M.A. thesis (Purnell 1965). There are, of course, differences in the Mien spoken in different parts of North Thailand, but they are relatively small, and since Purnell's work is available we will not repeat the details of the phonology here, but simply indicate its broad outlines, often following his thesis (in modified form) to make a basis for the presentation of an orthography for Mien.

Our own informants in the Tung area have included Tsan Fu, village headman and chief shaman for the area. He was 35 years old when the investigation began and had been born in the village of which he was headman. Saeng Fu, a cousin of Tsan Fu, also born and raised in the area, gave some help. Both of these men were semi-literate in Chinese and could speak Chinese (Yunnanese coloured by Cantonese teachers with whom they had studied), Myang (Northern Thai), and Hmong Daw (White Meo). Several other younger men of the village gave spasmodic help. Some were born and raised in the village and others were from the Phu Sang area of Laos. May Tshing, an elderly grandmother who had migrated at the time of the beginning of the investigation from the Phu Sang area of Laos, gave concentrated help.

Later, more systematic work was done with Fay Awn, a 35-year-old maternal cousin of Tsan Fu from the Pamong area of Laos (now married to a Hakka Chinese in Bangkok) and with Fu Tsan, a 40-year-old man, semi-literate in both Thai and Chinese, born and raised in the Chiang Kham area of Chiang Rai Province. He is able to converse freely in Mien, Yunnanese, Myang (Northern Thai) and some in Hmong (Meo), Central Thai and Hakka.

PHONEMES

We list here the phonemes and clusters which are of importance to the writing system, including a little phonetic detail about the vowels and the tones. We make some obvious modifications in phonemic symbolisation from Purnell's (1965) transcription in order to follow the general pattern of presentation followed by other articles in the present volume, and to make the presentation of the Thai orthography easier. The phonemic transcription used here and the one in Purnell are mutually transposable.

In Chart 1 the consonant symbols represent the Mien consonant phonem-

them give the approximate equivalent in those languages. Not listed here are the consonant clusters with /-y/ or /-w/ as the final consonant in the cluster. Examples of all phonemes are included later under a discussion of orthography.

CONSONANTS

p	t	ts	c	k	ʔ
ปู่	เต๋า	--	จ่าน	กั๋	ละฮาด
<i>spout</i>	<i>stop</i>	<i>puts</i>	<i>jam</i>	<i>skip</i>	<i>oh-oh</i>
ph	th	tsh	ch	kh	
พวน	ทวาร	--	ช่าย	ไย๋	
<i>pout</i>	<i>top</i>	<i>chip</i>	<i>witch</i>	<i>keep</i>	
b	d	dz	j	g	
บัว	เด็ก	--	--	--	
<i>bed</i>	<i>do</i>	<i>adze</i>		<i>got</i>	
m	n	l	ŋ	ŋ	
ม้า	หนุ	ลิง	หญิง ¹	ง	
<i>my</i>	<i>not</i>	<i>let</i>	<i>canyon</i>	<i>sing</i>	
mh	nh	lh	ŋh	ŋh	
--	--	--	--	--	
<i>Hmm</i>	--	--	--	--	
f	s				h
ฟั่น	โซ่				หับ
<i>fan</i>	<i>so</i>				<i>hop</i>
w			y		
แหว่น			ยักซ์		
<i>wet</i>			<i>yet</i>		
wh			yh		
--			--		
<i>where</i>			<i>hyuge</i>		

Chart 1. Simple and aspirated consonants. The first line represents the Mien phoneme. The second and third lines show Thai and English words respectively, with the roughly equivalent sound.

All single consonants and consonant clusters occur syllable initially. Final consonants are /p t k m n ŋ y w ʔ/.

The only clusters in Mien are those produced by aspiration, palatalisation and labialisation, and sequences of these. They occur only initially.

Examples of all consonants and consonant clusters will be given when problems of orthography are discussed below.

VOWELS

i			u
e			o
ɛ	ə	a	ɔ

Chart 2. Vowel phonemes

/i/ [i] high close front unrounded vowel. Occurs as the basic form in all environments, similar to Thai ๕ ๕ . Slightly lower alternates also occur except in open syllables and before /ʔ/.

/e/ [e] mid close front unrounded vowel. Occurs as the basic form in all environments except contiguous to palatals, similar to Thai ๕- .

[e^ʷ] mid semi-close front rounded vowel. Occurs as an alternate of [e] in syllables with stop or nasal finals.

[ə^ʰ] or [ɛ^ʰ] mid open front-central vowel. Occurs following a palatal and preceding a labial final, and conversely, following a labial and preceding a palatal.

[ɛ] mid open front vowel. Occurs contiguous to palatals elsewhere.

/ɛ/ [æ] low close front vowel. Similar to Thai ๕- .

/ə/ [a] low open central vowel. Occurs as the basic form in all environments except when preceded by palatal or bounded by semivowels. Similar to Thai ๕ .

[a^ʰ] low semi-open central vowel. Alternates with [a] following a palatal and preceding a velar final /-k -ŋ/. Also occurs in syllables with /-w/ or non-velar finals when not preceded by palatals.

[æ^ʷ] low semi-open front vowel. Occurs following a palatal or /w-/ and preceding /-y/.

[a^ʰ] low open front-central vowel. Occurs following a palatal

/a/ [a·] low open long central vowel. Similar to Thai -า.

/u/ [u] high close back rounded vowel. Occurs as the basic form in all environments. Similar to Thai -ู .

[u[˥]] high semi-close back rounded vowel. Occurs as an alternate with [u] in syllables with dental finals.

/o/ [e[˥]] mid open central-back unrounded vowel. Occurs contiguous to /w/.

[o] mid close back rounded vowel. Occurs elsewhere. Similar to the vowel in Thai ออ.

/ɔ/ [ɔ] low close back slightly rounded vowel. Similar to Thai -อ.

Non-phonemic vowel length in Mien is found in /a/ and in /e | u/ in some vowel combinations and with certain intonations. These are only incidental to the allophones as described above.

Vowel clusters in Mien are limited to two: /ie/ and /ue/, similar to Thai เ-ย and เ-ว respectively.

Glides with following [y w] are treated as -VC. They include /ey/, /əy/, /ay/, /ɔy/, /oy/ and /ew/, /əw/, and /aw/.

TONES

The basic tone contours are as follows.

1. Mid-high: level /unmarked/, similar to the Thai mid-level tone, unmarked on mid and low class consonants, as ตา มา.

2. Low: level /[˥]/, similar to the Thai low tone, marked with <[˥]> on mid and high class consonants and <พ[˥]> on low class consonants as ตา พม่า.

3. Mid: fall /^{˥˥}/, similar to the Thai falling tone written <˥˥> on mid class and <พ˥˥> on low class consonants, as บัว น้า.

4. High: rise-fall /^{˥˥˥}/, similar to the Thai high tone written <˥˥˥> on mid class and <พ˥˥˥> on low class consonants, as ป๊ะ แท้.

5. Mid-low: rise /^{˥˥˥˥}/, similar to the Thai rising tone written <˥˥˥˥> on mid class and <พ˥˥˥˥> on low class consonants, as ตัว ทาน.

6. Low mid: rise-fall /^{˥˥˥˥˥}/ No equivalent in Thai.

Tone 6 has a contour similar to tone 4 but at a lower pitch. It has a glottalised quality and is phonetically two syllables with fortition on the final syllable.

Though the first five tones are basically quite similar to Thai the

Thai would pronounce it) is mistaken for tone 4. Tone 6 pronounced with stress on the first phonetic syllable is mistaken for tone 3. Tone 6 must of course be learned quite apart from the Thai tonal system.

INTONATION

Intonation is significant in Mien, producing allophones of tones and distinguishing mode as well as nuance of meaning. This makes necessary the use of punctuation to signal intonation patterns.

The basic intonation patterns are:

1. Normal, a simple statement.
2. Sustained, indicating that there is more to follow.
3. Ordinary question.
4. Content question, signalled by "who", "how much", etc.
5. Exaggerated exclamation.
6. Ordinary exclamation.
7. Contrastive, signalled by reduplicated words implying a contrast with a previous condition.

SYLLABLE STRUCTURE

There are ten possible syllable shapes in Mien, though in some dialects (or idiolects) number 10 overlaps with number 8.¹ C = consonant, V = vowel, T = tone.

1. CVT	/ñâ/	ญ่า	'tooth'
2. CVVT	/bŭa/	จ่า	'name'
3. CVCT	/dzù?/	หญา	'knife'
4. CVVCT	/buə?/	ซั่วะ	'sack'
5. CCVT	/thó/	โถ้	'to ask'
6. CCVVT	/tshia/	เรียบ	'machine'
7. CCVCT	/khó?/	เคาะะ	'gourd'
8. CCVVCT	/phúə?/	ฟัวะ	'to lay one's head down'
9. CCCVT	/thyú/	ทั่ว	'to exchange'
10. CCCVCT	/mhyen/ or /mhien/	เฮมยีน	'face'

WORD STRUCTURE

Mien words are usually monosyllabic. A few definitely Mien forms are found which are disyllabic. /kəsiə/ <กะเจีย> 'stomach', /kəñiə/ <กะเหญีย> 'outside'.

Only two three syllable words have been recorded. /widthəñu?/
 <วตถะญ> 'radio' is definitely a borrowing from Thai. /tónóní/ <ต่อนอนี่>
 'jackfruit' is of unknown origin.

ORTHOGRAPHY

Two writing systems have been devised for the Mien in Thailand, one based on the Thai system of writing, and one using the letters of the Western alphabet, but in many cases not using them in conventional ways. Our interest in this paper is in the Thai orthography, which will be described in detail, but the system using English letters is included also for the record.

Phoneme	Symbol	Example	Meaning	Orthography using English letters ¹	
/k/	ก	/kòŋ/	ก่อง	'bottle'	k kxvɣ
/kh/	ข	/khǎŋ/	ข่าง	'to dry over fire'	K Kaavj
	ค	/khóy/	ค้อย	'sea'	Kxiq
/g/	ฆ ²	/mэгóŋ/	มุข่อง	'head'	G mGxvɣ
	ก (final)	/phók/	พัก	'pox'	k Pokq
/ŋ/	ง	/ŋúŋ/	ง่อง	'to squat'	v vxvb
/c/	จ	/cɔŋ/	จ่อง	'horn'	J Jxv
/ch/	ฉ	/chǎŋ/	ฉ่าง	'opportunity'	Q Qavj
	ช ²	/chá?/	ชะะ	'strength'	Qaa'q
/j/	ฉ ²	/júŋ/	ฉ่อง	'taut'	F Fxvb
/s/	ส	/syǎn/	เสียน	'to believe'	s syenj
	ฟ	/sɔŋ/	ฟ่อง	'frost'	sxv
/kʰ/	ญ ²	/kʰwɔŋ/	ญว่ง	'to crawl'	E Exv
/dz/	ท ²	/dzɔŋ/	ทว่ง	'to argue'	R Rxv
/ts/	ฒ ²	/bətɔŋ/	บะฒว่ง	'nose'	z Ba'zxv
/d/	ด	/dúŋ/	ด่อง	'muddy'	D Dxvb
/t/	ต	/tɔŋ/	ตว่ง	'to be finished'	t txv
/th/	ถ	/thwí/	ถวย	'to return'	T Twij
	ท	/thó/	ท้อ	'to ask for'	Toq
/tsh/	ร ²	/tshíə/	เรี่ย	'machine'	Z Zia
		/tshwót/	ร่วต	'to exit'	Zwrtq
/n/	น	/nɔm/	นอม	'thing'	n nxm

¹In the system which uses English letters, tone is indicated by final consonant symbols. Tone 1 is unmarked, the remaining tones, in order, are shown by <-g -b -q -j -d>.

²Symbols which do not have the same value in the Mien orthography as they have in

Phoneme	Symbol	Example	Meaning	Orthography using English letters
/b/	บ	/bəbɔŋ/	บะบอง 'mallet'	B Ba'Bxv
/p/	ป	/pɔŋ/	ปอง 'assist'	p pxv
/ph/	ผ	/phǎy/	ผาย 'to cut'	P Paa'ij
	พ	/phǎŋ/	พ้ง 'guest bed'	P Pavb
/f/	ฝ	/fǎŋ/	ฝ้ง 'picture'	f favj
	ฟ	/fɔŋ/	ฟอง 'arrow'	fxv
/m/	ม	/mǎŋ/	หมอง 'to open'	m mxvj
/y/	ย	/sin yôm/	ซิน ย่ม 'goose pimples'	y sin yomb
/i/	ล	/lǎŋ/	ล้ง 'protrusion'	l lxvb
/w/	ว	/wét/	เว็ด 'to dig'	w wetq
/h/	ห	/hǎm/	เหม 'to scold'	h hemj
	ฮ	/hú/	ฮู้ 'rotten'	huq
/ʔ-/	อ ¹	/ʔɔŋ/	ออน 'rack'	xn
/-ʔ/		/túʔ/	ตุ้ 'to be able'	? tu'q

As will be noticed above, some of the aspirated consonants have been written with unit symbols in the Thai manner:

ผ ฟ /ph/, ถ ท /th/, ฐ /tsh/, ฉ ช /ch/, ข ค /kh/.

All these consonants follow their usage in Thai, except for which has no counterpart in Thai. A unit symbol <ɾ> was chosen for this since it fits the pattern of aspirate stops. Mien literate in Thai seem quite happy with this choice.

They seem just as happy with the choice of writing the aspirate continuants as a sequence of two symbols.

/mh/	อม	/mhe/	เฮม 'lard'	M Me
/nh/	อน	/nhǎŋ/	หนาง 'cooked rice'	N Naavj
/lh/	อล	/lhǎ/	หลา 'moon'	L Laaj
/ñh/	อญ	/ñhǎŋ/	หญา 'year'	H Haavj
/ŋh/	อง	/ŋhǎʔ/	ฮงะ 'to cut'	V Vaa'q
/wh/	อว	/whi/	ฮวี 'lime'	W Wi
/yh/	ฮย	/yhèt/	เหี้ยด 'eight'	Y Yetg

Labialisation is indicated by <ɿ>.

/mhw/	อมว	/mhwǎŋ/	อมว้ง 'classifier for household members'	Mwavq
/ŋw/	งว	/kûŋwǎa/	กั๊งว้า 'Baby'	kub vwaad
/pw/	ปว	/pwón/	ปวน 'shoot'	pwrnq

¹The glottal stop in /eʔ ɛʔ oʔ iəʔ uəʔ/ is symbolised by final <ɾ>. Since /aʔ/ [a.ʔ] is found in Mien but not in Thai, the <ɾ> is extended to that use also. For the glot-

Palatalisation is written as <u> plus vowel before all vowels except /ə/. In the case of /yə/ or /iə/ (between which there is considerable fluctuation) the palatalisation is written as <ɿ̥y>.

/mhy/	หมย	/mhyen/	เฮมียน	'face'	Myen
/py/	ปย	/pya/	ปยา	'five'	pyaa
		/pyôŋ/	ปย้อง	'forehead'	pyxvb
		/bàpyey/	บะเปยย	'hair'	Ba'pyei

The same fluctuation occurs between /wə/ and /uə/ causing the same problem. <ɿ̥> is used in the orthography as in <ɿ̥> 'to tell' while <ɿ̥> is used for /wo/ or /uo/ plus a consonant as in /bwon/ <ɿ̥> 'powder'. <ɿ̥> + consonant indicates /wə/ or /uə/ while <ɿ̥> alone stands for /wo/.

This problem is still being investigated.

In final position /m n ŋ w y/ are transcribed by <ม น ง ว ย> as in Thai. The final glottal /ʔ/ will be discussed under vowels since Thai handles it in connection with its vowel symbols.

Final /p t k/ [-m? -n? -ŋ?] are symbolised by <บ ต ก>, parallel to Thai. The <ก> /k/ was chosen for /g/ finally since it would look more natural than the <ง> which is a symbol with an altered value in the orthography.

Although vowel length is not phonemically contrastive in Mien, it seems wise to use both the long and short Thai vowel symbols, spelling the vowels phonetically to some extent in relation to the way the Mien literate in Thai identify them with Thai vowels. All vowels except /o/ are long before /ŋ/ and short elsewhere. /o/ is always short medially. In a few instances some literate Mien choose the long vowel symbol before /m/, but others are as insistent on the short vowel. It may be a problem of idiolect. /é ɛ æ/ are shortened by writing <ɛ̃> over the initial consonant when they occur in the same position if there is no tone marking. This must be done as before final /p t k/ to produce tone 4. If there is a tone mark the <ɛ̃> is omitted, as in Thai.

An inventory of vowels in combination with final consonants and their symbolisation in the orthography follows:

Phoneme	Combination	Example	Meaning	Orthography using English letters
/ə/	/əp/	/təp/	ตีบ	'to insert' tapq
	/ət/	/tət/	ตด	'display wares' tatg
	/ək/	/tək/	ตัก	'clicking sound' takq
	/əm/	/təm/	ตม	'lice' tamq
	/ən/	/tən/	ต๋น	'to eat' Eang or Ecng
	/əŋ/	/təŋ/	ตัง	'small scale' tavq

Phoneme	Combination	Example	Meaning	Orthography using English letters
/ə/	/əy/	/tə̀y/	ไต่	'to die' taig
	/əw/	/məw/	เมา	'soft' mau
	/əʔ/	/tə̀ʔ/	เตะ	'push with foot' ta'g
	/iə/	/tɪə/	โต๊ะ	'table' tiab
/a/	/ap/	/táp/	ต๊ाप	'to put on' taapq
	/at/	/tát/	ต๊าด	'flattened bamboo' taatq
	/am/	/tám/	ต้าม	'brave' taamq
	/an/	/tsán/	ฉาน	'cup' zaanq
	/aŋ/	/baŋ/	บาง	'to collapse' Baav
	/ay/	/tây/	ต้าย	'come' taaib
	/aw/	/tâw/	ต้าว	'first' taaub
	/aʔ/	/àʔtúʔ/	อาะ ตู้	'difficult' aa'g tu'q
	/a/	/yà/	หย่า	'also' yaag
/i/	/ip/	/síp/	ฮิบ	'to appease spirits' sipq
	/it/	/hít/	ฮิต	'a short while' hitq
	/im/	/im/	ฮิม	'bitter' im
	/in/	/nín/	นิน	'third person' ninb
	/iŋ/	/mín/	มิง	'to go' mivb
	/iw/	/tíw/	ติว	'classifier for long things' tiub
	/i/	/sì/	สี่	'a matter' sig
	/wi/	/wí/	วืย ¹	'to feed' wij
	/iʔ/	/síʔ/	ฮิ	'red' si'q
	/iə/	/yíə~iə/	เยีย	'first person' yia
	/iə/	/myên~míen/	เมี่ยน	'person' myenb
/u/	/ut/	/pút/	ปู้ด	'to have a malady' putq
	/un/	/mun/	มุน	'pain' mun
	/uŋ/	/múŋ/	มุง	'city' muvq
	/uy/	/luý/	ลุย ¹	'shirt' lwí
	/u/	/hú/	ฮู้	'rotten' huq
		/hyú/	ฮิว	'to know' híuq
	/uʔ/	/tsúʔ/	ตุ	'to wear' zu'q
	/uə/	/dúə/	ดัว	'nine' Duab
/e/	/ep/	/hèp/	เห็บ	'narrow' hep

¹/wi/ (i.e. ±C+/wi/) fluctuates between [ui] and [wí]. The Thai spelling of <วื> is used for both.

Phoneme	Combination	Example		Meaning	Orthography using English letters
/e/	/ep/	/tsyèp tsièp/	เห็ดยบ	'ten'	zyepg
	/et/	/wét/	เว็ด	'to dig'	wetq
	/ek/	/khék/	เค็ก	'to hop'	Kekq
	/em/	/hém/	เหม	'to scold'	hemj
	/en/	/hén/	เฮ้น	'strong, vigorous'	henq
	/eŋ/	/lâŋ/	เล้ง	'more than'	levb
	/e/	/hê/	เฮ	'shoes'	heb
	/eʔ/	/fêʔ/	เฟะ	'shredded'	fe'q
	/ew/	/bew/	เบว	'burst'	Beu
	/ey/ ¹	/mêy/	เมย	'second person'	meib
/ɛ/	/ɛp/	/thép/	เท็บ	'Burmese rupee' (Thai)	Tcpq
	/ɛn/	/tsen/	แต่น	'sound of bee buzzing'	zcn
	/ɛŋ/	/ǎŋ/	แ้ง	'again'	cvj
	/ɛ/	/tɛ/	แต	'Daddy'	tc
	/ɛʔ/	/pèʔ/	แปะ	'white'	pc'g

[ɛy] This is phonemically an allophone of /ə/ after /w/ but this does not keep some of the Yao from wanting to spell such words as /kwəy/ [kwæe] with <เ-ย>, i.e. <เวย> instead of <เวย>. It is quite probable that phonetic spelling should be used in this case.

/o/	/op/	/bòp/	บบ	'squirrel'	Bopg
	/ok/	/phók/	พัก	'por'	Pokq
	/om/	/lòm/	หล่ม	'jungle'	lomg
		/wom/	อวม	'water'	uam
	/oŋ/	/nǒŋ/	หนง	'good'	novj or lovj
	/o/	/lǒ/	โล	'old'	lod
	/oʔ/	/dóʔ/	โด้ะ	'ravine'	Do'q
	/ow/	/sow/	โซว	'book'	sru
	/wo/	/bwon/	บวน	'powder'	Bwrn
/ɔ/	/ɔp/	/hòp/	หอบ	'proper'	hxpg
	/ɔt/	/sòt/	ลोट	'scraping sound'	sxtg
	/ɔm/	/nom/	นอม	'thing'	nxm

¹/-ey/ presents a bit of a problem. <เ-ย> is /əy/ in Thai, so the modification <เ-ย> was used at first. Mien literate in Thai felt this unnecessary as they pronounce <เ-ย> as /ey/, having no [ey] in their language. Hence the <-> was dropped.

Examples of transcriptions of the various tones follow.

Tone	Example			
1	/tɔŋ/	ตอน	(mid class consonant)	'son'
	/ləy/	ไล	(low class consonant)	'vegetable'
2	/kɔŋ/	ก่อง	(mid class consonant)	'bottle'
	/tɔp/	ตบ	(mid class consonant)	'beans'
	/sɔt/	สอต	(high class consonant)	'scraping sound'
	/mɔŋ/	หมั่ง	(low class consonant)	'to look'
	/dzɔp/	หตบ	(low class consonant)	'to alight'
	/nɪt/	หนิต	(low class consonant)	'a chisel'
3	/dɔŋ/	ด่อง	(mid class consonant)	'muddy'
	/lɔŋ/	ล่อง	(low class consonant)	'sky'
	/lɔʔ/	เล้าะ	(low class consonant)	'question particle'
4	/bɔŋ/	บึ้ง	(mid class consonant)	'bone'
	/dɔp/	ดิบ	(mid class consonant)	'skin'
	/thɔ/	ท้อ	(low class consonant)	'ask for'
	/sɛk/	เซ็ก	(low class consonant)	'quietly'
	/fɛʔ/	เฟะ	(low class consonant)	'shredded'
5	/kɔʔ/	ก้อ	(mid class consonant)	'older brother'
	/hɔw/	โหว	(high class consonant)	'trousers'
	/gɔʔ/	โหม	(low class consonant)	'husband'
6	/tɔŋ/	ตึ้ง	(mid class consonant)	'pig'
	/pɔŋ/	บ้อง	(mid class consonant)	'to blow'
	/mɔʔ/	ม้า	(low class consonant)	'horse'
	/phɛŋ/	แพ้ง	(low class consonant)	'sound of a shot'

There is some complication in the matter of tone marking on syllables ending with a stop. Purnell (1965) lists only five occurrences of tone 1 (mid level) occurring in such syllables. /taʔ/ and /maʔ/ are contractions of /tây/ <ต้าย> 'come' and /mây/ <ม้าย> 'have', respectively. /lɔʔ/ (question particle) could possibly be explained by intonation, as could /ʔəʔ/ (tense marker) perhaps. This leaves /mhəʔ/ (meaning not indicated). For the time being this tone is being ignored in the orthography.

Intonation patterns are marked as follows:

1. End of ordinary statement .
2. Sustained (another word, phrase or clause follows) ,

4. Content question	?
5. Exaggerated exclamation	!
6. Ordinary exclamation	!
7. Contrastive	No mark

EVALUATION OF THE ORTHOGRAPHY

The relatively easy adaptation of the Thai orthography to the Mien language has been arrived at through considerable experimentation and help from Mien literate in Thai through government schools in Pulanga Pong District of Chiang Rai Province and in certain Thai village schools.¹

The fact that the tonal system of Mien is so much like the five written tones of Thai certainly simplifies the tone markings. The only adaptation required was the addition of the extra tone marker <~>, which was chosen after experimentation with various other symbols.

The vowel system fits the Thai script quite well also with the use of both long and short vowel symbols in the orthography. This makes literate Mien happier than a more strictly phonemic transcription and provides a smoother carry-over to Thai.

The /a?/ which never occurs in Thai is easily taken care of by the analogy of <เ-ะ เ-ะ>, and is written <-าะ>.

The question of stress on phonetic syllables sometimes causes an uneasy feeling concerning the spelling of such words as: /lyǎŋ/ [lyǎŋ'] <เหลียง> 'field' which in Thai would be [lɨ'əŋ], and /dyǎŋ/ [dyǎŋ'] <เดียง> 'tree' which in Thai would be [dɨ'əŋ] (['] represents stress placement).

In the consonant inventory only /ts dz tsh j g/ are completely out of range of the Thai orthography.

<ฅ ฑ ฐ> were arbitrarily chosen for /ts dz tsh/ and <ฌ ฎ> for /j g/ respectively because these symbols are rare in Thai, and the change of value in the Mien orthography would cause less difficulty when people transferred to reading Thai than would symbols found more frequently in Thai. Yet they are still not so rare as to have disappeared from the standard typewriter keyboard. Furthermore, they can be printed, whereas if we made up new symbols these could not be printed in regular printing presses. The point of articulation in each case is close to that of the Mien sound.

¹Valuable help on the part of William A. Smalley, Beulah Johnston, Niyom Riengchandra (of Prasarn Mitr University), and Ua Manurat (Principal of the Chiang Kham High School) must be acknowledged.

The /ñ/ was quite naturally represented by <๓> which is pronounced as /ñ/ in Myang (Northern Thai), the trade language of the Mien people.

Thus we add five consonant symbols and adapt one from Myang, add one tone symbol, and add the new combination of <-๓>.

The orthography using Western letters was devised before the Thai orthography, and has been used extensively in the Mae Chan area.

Some of the less refined features of this orthography could have been smoothed out if a more complete phonemic analysis had been completed before the demand for an orthography forced it into use. For example, <b d g> were used in final position for tone symbols before it was discovered that they were needed initially. Hence <B D G> were introduced as initials.

Further difficulty arises in the vowel system in the Western orthography for obviously <a e i o u> do not take care of all the needs. Hence the introduction of <x> for /ɔ/ and <c> for /ɛ/.

The Thai orthography for the Mien was introduced by different sets of primers which have been used in the Chiang Kham and Chiang Saen areas of Chiang Rai Province and in the Pua area of Nan Province.

Literature now available in Thai-orthography Mien includes a hymn-book with about 100 hymns, a chorus book, various books of selections from the Bible including the Life of Christ, and a rather complete collection of Old Testament stories, "comics" style books of parables, etc. There is also an alphabet book with all the initial consonants along with pictures. The symbols that have a different value in Mien from what they have in Thai are printed on different coloured pages so this book is of value to those who are making the transfer either from Thai literacy to Mien or Mien literacy to Thai. It also includes information on consonant classes, consonant clusters and use of tone marks.

As far as adult literacy is concerned, the romanised orthography has been more widely used, although it has met with acceptance only by Christians in Mae Chan and Ngao areas of Chiang Rai and Lampang Provinces.

An accurate estimate of those Mien literate in Thai is hard to make, but it is likely well over a thousand, and increasing rapidly as now in addition to government schools for children the government is developing an adult education for the hill tribes. A few adults have already completed tenth grade in this programme. Motivation for literacy is just beginning to stir among Mien men.

Mien materials have been distributed in many villages where there are Mien literate in Thai, and some instruction has been given to about

effort to read these materials is unknown, but interest is increasing and many make the transfer easily with no help.

The number of those literate in romanised script is between two and four hundred.

SAMPLE TEXT

yiə buə wá cǎo myên nòŋ ów nòŋ gǔw, nòŋ tây,
 เยีย บัว วั ฉ้อ เมียน หนึ่ง เอ้า หนึ่ง โทฆว หนึ่ง ต้าย
we (pl) yonder upper people take wife take husband take (directional)

kwòŋ mǎy tú? hǎy tâw kwòŋ tsěy tây mǎy
 กวัง ไม้ ตู หาย เต้า กวัง เฉย ต้าย ไม้
throw-away not able whoever throw (part.) becomes not away

pěŋ. nòŋ tây, tsə kén nòŋ ó? nòŋ tây,
 เป้น หนึ่ง ต้าย หะแก้ง หนึ่ง อ๊ะ หนึ่ง ต้าย
proper take (directional) really take (past-tense) take (directional)

nòŋ tshém ĩhǎŋ, nòŋ kəw mǎy pěŋ kw, náy wá tsù?
 หนึ่ง รัม หอญาง หนึ่ง เกา ไม้ เป้น นอ น้าย อ้าว หตุ
take many years take once not proper thus this-way that time

nhoy tshǎŋ tây kwòŋ, kwòŋ tsǎo tâw mǎy mǎy tâw
 ฮนอย หริ่ง ต้าย กวัง กวัง หะฮย เต้า ไม้ ม้าย เต้า
day then throw-away throw-away several (clf.) not have one

kwòŋ. tsǎop pǎi tâw tshǎŋ tây kwòŋ tâw yà
 กวัง หะฮยบ ป้า เต้า หริ่ง ต้าย กวัง เต้า หย่า
throw-away ten or-so (clf.) then throw-away one also

mǎy mǎy tày fən nòŋ nǎy kw nòŋ cén
 ม้าย ม้าย เตย ฟัน หนึ่ง ญุย นอ หนึ่ง เจ็น
have have few carelessly take adj.-part. thus take securely

tây thǎw tày ó? tày tsěy tày kǎŋ wá lyǔ.
 ต้าย เต้า ใต้ อ๊ะ ใต้ เฉย ใต้ ก้อง อ้าว ลัว
(dir.) until die past-tense die (part.) die if that-way finished

mǎy tày tsěy nhǎŋ náy kw nòŋ
 ไม้ ใต้ เฉย หนึ่ง น้าย นอ หนึ่ง
not die (part.) like this thus good

yie myên tsǎw kɔŋ kǎw. ǎy tsù? tsǎ? lyǎŋ. máy nɔy tú?

เยียน เมียน โห้ว กง ไคว๋ อ้อย หลู ฉะ เหลียง ไม่นอย ตู๋

I Yao do work heavy want must clear field not able able

ก๊อ. tsǎ? lyǎŋ tây, yà ǎy tsù? gǎy. gǎy tây

หญั้น ฉะ เหลียง ต่าย หย่า อ้อย หลู หลอย หลอย ต่าย

eat clear field having, also want must cut-trees cut-trees

yà ǎy tsù? tsuǎ nín gay tây. yà ǎy tsù? puǎ.

หย่า อ้อย หลู ฉัว นิน ขาย ต่าย หย่า อ้อย หลู ปัว

also want must wait it dry (dir.) also want must burn

puǎ tây yà ǎy tsù? pyú.

ปัว ต่าย หย่า อ้อย หลู ปัว

burn (dir.) also want must gather

SUPPLEMENTARY NOTE, JUNE 1976:

More recent estimates of the Mien population in Thailand are about 25,000. Including refugees from Laos there are probably still 5000 or more in the border areas, but the heaviest concentration is now along the road from Ngao to Mae Chan.

CHAPTER NINE

MAL (THIN)

DAVID FILBECK

Mal is an Austroasiatic language of the Mon-Khmer group closely related to Khmu', Lawa, etc. The Mal people are located in Pua District, Chiang Klang District, and Thung Chang District of Nan Province (LeBar *et al.* 1964:128-9; Young 1962:61-4; Filbeck 1974?).

There has been confusion about the name of this ethnic group. In English it has been called Tin, variously spelled as <Thin T'in Htin>. These spellings are no doubt an attempt to reflect the Thai high class consonant <ถ> /th/.

In Thai writings, Tin has been spelled as <ถิน> /thĭn/ by Boon Chuey Srisavadi (1963b:229). Kraisri Nimmanahaeminda (1963:following p.183) wrote <ถึน> /thĭn/. In Nan Province, this tribe is sometimes called ถึน /thĭn/ but never ถิน /thĭn/. However, this name is rarely used by the Myang (Northern Thai) in Nan. The name most used by the Thai in Pua Chiang Klang and Thung Chang Districts is ลัวะ /lúa?/. This is the same name by which the Lavüa' (Lawa) people are called by the Thai around Chiang Mai.¹

Yet neither T'in nor Lua' is the indigenous name of this tribe. In fact, there is no single ethnonym by which the people of this hill tribe call themselves. Instead, the T'in are divided into two sections, with each section having a different ethnonym. The people of one section call themselves /phyam maa/ 'The Mal People', and those of the other

¹See Chapter 11. It has been the writer's impression that the Thai outside of Nan Province are unaware of another "Lua'" group in Nan; and that the Thai in Nan are unaware of another "Lua'" group outside of Nan. The Lavüa' and Mal languages are mutually unintelligible, though related.

section call themselves /khram pray/ '*The Pray People*'. (For an extended discussion of these two ethnonyms, see Filbeck 1971a and 1971b).

There are several dialects of T'in, ranging from slight and regular differences to almost complete mutual unintelligibility (cf. Filbeck 1971b). The dialect reported in this paper is a Mal dialect and represents a population of about 3000 people (cf. Filbeck 1972). More specifically, it is a report on the data collected from three villages: Ban Huai Put (บ้าน ห้วย ปูต) and Ban Toei (บ้าน เต้ย), both of Pua, Pua District, Nan Province; and Ban Pha Nam Yoi (บ้าน ผา น้ำ ย้อย), in Chiang Klang District, Nan Province.

Principal informants were Mul Chitrari, formerly of Ban Huai Put, and Tip Inpa, formerly of Ban Toei. Mul Chitrari, half Mal half Thai, lived in Ban Huai Put while a child until about twenty years of age. Tip Inpa, a Mal tribesman, was born in Ban Toei. For the past few years both of these men have lived in the Thai village Ban Huai Thang, Village No. 5 in Sathan, Pua District, Nan Province. Mul Chitrari, however, died in 1970. Both men served as informants from August 1962 to May 1963. From August 1963 until May 1964 (when this paper was completed)¹ research was carried on in Ban Pha Nam Yoi where the writer then lived. In all, there are about fifteen villages that speak this dialect.

CONSONANT PHONEMES

The consonant phonemes of the Ban Pha Nam Yoi-Ban Toei² dialect of Mal³ are as follows:

p	t	c	k	ʔ
b	d			
m	n	ɲ	ŋ	
	l			
	s			h
w		y	ʃ	

All consonants except /ʃ/ can occur at the beginning of a major

¹Since this paper was originally written, other Filbeck references in the bibliography have been completed.

²The two villages of Ban Toei and Ban Huai Put were at one time one village. Several years ago a number of people left Ban Toei to cut out new rice fields further west. They established Ban Huai Put. Natives of both villages have the same last name (Inpa).

syllable.¹ In the Ban Toei dialect all consonants except /b d s/ can occur at the end of a major syllable. In the Ban Pha Nam Yoi dialect all consonants except /c b d ñ s/ can occur in this final position. Where /c ñ/ occur in the final position in the Ban Toei dialect, /t n/ occur in the Ban Pha Nam Yoi dialect: /məc/ <ເຢັຈ> v. /mət/ <ເຢັຕ> 'to see'; /ʔəñ/ <ເຢັຢ> v. /ʔən/ <ເຢັນ> 'I'.

Some consonant phonemes have more than one pronunciation (allophone). A description of the pronunciation(s) of each consonant with examples follows.

/p/ [bp] voiceless bilabial stop with voiced stop onset, similar to Thai ㅍ in final position; occurs in final position only: /pop/ [pobp] <ປູ> 'to meet'; /ntuup/ [ntu.bp] <ນຕູບ> 'lean-to'.

[bph]² voiceless released bilabial stop with voiced stop onset; fluctuates freely with [bp] before pause: /ñəp/ [ñəbp]v[ñəbph] <ເຢັບ> 'to catch'.

[p] voiceless bilabial stop very similar to Thai ㅍ; occurs elsewhere: /payh/ <ປ້ຍ> 'to flee'; /phat/ <ພັຕ> 'to squeeze'.

/t/ [dt] voiceless alveolar stop with voiced stop onset, similar to Thai ត in final position; occurs in final position only: /kuut/ [ku.dt] <កູຕ> 'to enter'; /ʔ+tt/ [ʔ+.dt] <ຮັຕ> 'hardship'.

[dth]² voiceless released alveolar stop with voiced stop onset; fluctuates freely with [dt] before pause: /ʔat/ [ʔədt]v[ʔədtth] <ຮັຕ> 'be located'.

[t] voiceless alveolar stop very similar to Thai ត; occurs elsewhere: /taa/ <ຕາ> 'place'; /nthuut/ <ນທູຕ> 'to blow'.

/c/ [dʔ] voiceless palatal unreleased stop with voiced stop onset; occurs in final position only in the Ban Toei dialect: /thooc/ [tho.ydʔ] <ໂຫຼຈ> 'to burn'; /luac/ [luaydt] <ລາຈ> 'already'.

[dʔh] voiceless palatal released stop with voiced stop onset; fluctuates freely with [dʔ] before pause: /məc/ [məydʔ]v[məydʔh] <ເຢັຈ> 'to see'.

[tsy] voiceless alveolar released stop with palatalisation; fluctuates freely with [c] in the consonant cluster /ñc-/: /ñcəm/ [ñcəbm]v[ntsyəbm] <ເຢັຈໂມ> 'to be silent'.

¹A major syllable is a syllable which may carry primary stress. Minor syllables may never be so stressed.

²For example, in the Ban Toei dialect, the consonant [bph] is the conclusion that these

[c] voiceless palatal released stop very similar to Thai จ; occurs elsewhere: /cak/ <จก> 'go'; /cah/ <จห> 'to call'.

[dʈ] presents a difficulty in pronunciation. While [c] has a fricative or "s" release in initial position (compare Thai จ), [dʈ] has no such release. It is pronounced much like an English speaking person would say *much* except with no [ʃ] release. Yet, both allophones are pronounced with the mid part of the tongue touching the roof of the mouth. As such, [dʈ] in final position has an automatic [ɣ] on-glide: /ʔəc/ [ʔəydʈ] <เฒ่า> 'already'.

/k/ [gk] voiceless velar stop with voiced stop onset, similar to Thai ก in final position; occurs in final position (except after [ʌ]) only: /kiik/ [ki.gk] <กีน> 'to set fire to'; /ʔaak/ [ʔə.gk] <อาท> 'sun-shine'.

[gkh]¹ voiceless released velar stop with voiced stop onset; fluctuates freely with [gk] before pause: /yak/ [yagk]ʷ[yagkh] <ยัก> 'to love'.

[g] voiced lenis velar stop similar to English /g/ (as in *gate*) as pronounced by speakers of English who do not have a voiceless lenis unaspirated stop instead; fluctuates freely with [k] between two voiced phonemes: /ŋkɭaŋ/ [ŋɭagŋ]ʷ[ŋkɭagŋ] <งกลัง> 'body'; /ŋkɭɪ/ [ŋɭɪ.ɪ]ʷ[ŋkɭɪ] <งกือ> 'with'.

[k] voiceless fortis velar stop very similar to Thai ก; occurs in final position following vocoid [ʌ], /liak/ [liak] <เลียก> 'afraid'; and elsewhere, /kaĩ/ <ไกร> 'straight'; /ŋkhaa/ <จก> 'torch'.

/ʔ/ [ʔh] glottal released stop; fluctuates freely with [ʔ] before pause: /ʔiaʔ/ [ʔiaʔ]ʷ[ʔiaʔh] <เีย> 'far'.

[ʔ] glottal stop; occurs elsewhere: /ʔii/ <อี> 'we (inclusive)'.

/b/ voiced bilabial stop very similar to Thai บ; occurs in initial position only: /bot/ <บด> 'cloud'; /but/ <บุด> 'shirt'.

/d/ voiced alveolar stop very similar to Thai ด; occurs in initial position only: /dɪĩ/ <ดิ> 'over there'; /duaŋ/ <ดว> 'personal name'.

/m/ [m] voiced bilabial nasal very similar to Thai ม in initial position; occurs initially and in final position following phonetically nasalised vowels: /moot/ [mɔ̃.dɪ] <มอด> 'ant'; /ʔɛɛm/ [ʔɛ̃.m] <แอม> 'to do'; /nham/ [nhəm] <นหม> 'medicine'.

¹[bph dth gkh] were not included in Filbeck 1965 because of the conclusion that these

[bm] voiced bilabial nasal with voiced stop onset; occurs elsewhere: /paam/ [pa.bm] <ปาม> 'they (dual)'; /lhom/ [lhobm] <ลหม> 'able'.

/n/ [n] voiced alveolar nasal similar to Thai น in initial position; occurs initially and in final position following phonetically nasalised vowels only (no examples of [n] following [mhV- ñhV-] have been recorded): /ntoʔ/ <โตนตะ> 'time'; /ʔɔɔn/ [ʔɔɔ.n] <ออน> 'to comfort'; /ñ+n/ [ñɿn] <ญึน> 'to offer'.

[dn] voiced alveolar nasal similar to Thai น in final position; occurs elsewhere: /thoon/ [tho.dn] <โตน> 'to buy'; /phoon/ [pho.dn] <โพน> 'four'.

/ñ/ [ñ] voiced palatal nasal similar to Northern Thai ญ and to English -ny- as in *canyon*; occurs initially only (no examples of [ñ] following phonetically nasalised vowels have been recorded): /ñɔɔn/ <ญอน> 'because'; /ñaaʔ/ <ญาา> 'to wash'.

[dñ] voiced palatal nasal with voiced stop onset; occurs elsewhere (Ban Toei dialect): /lɔɔñ/ [lɔɔ.ydñ] <ลญ> 'to tell'.

/ñ/ in final position presents the same kind of problem which /c/ presents in pronunciation. Its tongue position is like /c/. When /ñ/ occurs at the end of a major syllable, it has an automatic [y] on-glide: /pheñ/ [pheydñ] <เพญ> 'to shoot'.

/ŋ/ [ŋ] voiced velar nasal similar to Thai ง and English ng; occurs initially and in final position following phonetically nasalised vowels only (no examples of [ŋ] following [mhV- ñhV-] have been recorded): /ʔɔɔŋ/ [ʔɔɔ.ŋ] <อง> 'husband'; /neen/ [ne.ŋ] <เ็น> 'to hear'.

[gŋ] voiced velar nasal with voiced stop onset, similar to Thai ง in final position; occurs elsewhere: /seen/ [se.gŋ] <เ็น> 'to seine'; /kiŋ/ [ki.gŋ] <กึง> 'to sew'.

/l/ [dl] voiced alveolar lateral preceded by voiced alveolar stop, similar to English -dle as in the word *middle* when spoken rapidly; occurs in final position only: /kia/ [kiadl] <เคียด> 'night'.

[l] voiced alveolar lateral occurring elsewhere; very similar to Thai ล in initial position and in initial consonant clusters: /luh/ <ลุ> 'wrong'; /khli/ [khliI] <คลึ> 'to fall down'.

/s/ [tʃh] voiceless palatal aspirated affricate, similar to the English ch- as in *change* and to Thai ช; fluctuates freely with [s]: /see/ [se.]~[tʃhe.] <เช> 'field'; /nsuy/ [nsuy]~[ntʃhuy] <นชู> 'to stretch out hand'.

fluctuates with [tʃh]: /seh/ <เซ็ห> 'lazy'; /swaa/ <ฮว> 'monkey'.

/h/ [ɸ] voiceless alveolar lateral fluctuating freely with [h] in the consonant cluster /lh-/ (in some speakers): /lh++m/ [lɸ++bm] ~ [lh++bm] <ลหืม> 'to rain steadily'; /lhob/ [lɸobp] ~ [lhobp] <ลหบ> 'return'. [ɸ] is pronounced by blowing the air over the side of the tongue.

[h] voiceless glottal fricative similar to Thai ฮ occurring elsewhere: /hoʔ/ <โห> 'better'; /khoo/ <โค> 'tired'.

[h] in final position is a voiceless vocoid¹ of the same formation as the preceding voiced vocoid: /sih/ [siI] <ซึห> 'to place'; /ʔayh/ [ʔayY] <ฮัย> 'swollen'; /ʔiah/ [ʔiaA] <ฮืห> 'wife'; /moh/ [mqʊ] <โหม> 'nose', etc. It amounts to a puff of air blown out at the end of a major syllable with tongue and lips remaining in the same position that produced the sound of the preceding vocoid.

/w/ [W] voiceless bilabial vocoid occurring following voiceless consonants /th c ch k kh s/: /cweɛŋ/ [cWɛ.gŋ] <แควง> 'corner'; /kweh/ [kWeE] <เกว> name of village; /khwaay/ [khWa.y] <ควาย> 'sweet potato'.

[w] voiced bilabial vocoid occurring elsewhere: /waan/ <วาง> 'year'; /hwǎy/ <หวัย> 'pay homage'; /ʔaw/ <เอ> 'father'.

/y/ [Y] voiceless palatal vocoid occurring following voiceless consonants /p ph k kh/: /pyaa/ [pYa.] <ปยา> 'machete'; /phyam/ [phYabm] <พยม> 'person'; /kyaa/ [kYa.] <กยา> 'thin'; /khy++t/ [khY+.dt] <คยิด> 'glue'.

[y] voiced palatal vocoid occurring elsewhere: /mooy/ <โหมย> 'one'; /hyuŋ/ <หยุ> 'boiled rice'.

/ĩ/ voiced velar vocoid interpreted as consonant; occurs in final position only: /ŋaĩ/ <งั> 'cold'; /thaaĩ/ <ทาร์> 'rope'.

The phoneme /ĩ/ is evidently a unique development in the Ban Pha Nam Yoi-Ban Toei dialect of Mal. In at least one other dialect it corresponds to /r/ in final position. It is a high, back, unrounded vocoid, pronounced further back in the mouth than English /u/, much like the Thai ู /uu/ only with unrounded lips. The correct tongue position to produce /ĩ/ can be pinpointed by practicing three words. In /suĩ/ <สุ> 'be rotten', the tongue, being in position already to pronounce the /u/ does not glide into any other position. However, the lips, being rounded, quickly become unrounded. In /nth+ĩ/ <นท> 'bat', the tongue

¹A vocoid is a non-phonemic classification of a sound which is often traditionally called a vowel. Certain vocoids can be interpreted as either vowels or consonants

makes a perceptual glide backward. The lips, being unrounded in order to produce the vowel /ɨ/, remain unrounded. In /koɨ/ <นํ> 'to claw', there is a tongue glide upward into an /u/ position and the lips become unrounded. /ɨ/ occurs as a glide with every vowel except /ɛ/: /iɨ eɨ ɨɨ əɨ aɨ uɨ oɨ ɔɨ/.

/ɨ/ is interpreted as a consonant because of its distribution only at the end of a major syllable. In /nthɨ/ [nthɨ] <นํ> 'bat' one can notice that the prominent or crest part of the syllable is the vocoid [+]. After the crest is reached in this vocoid, there is a lessening of prominence. For this reason /ɨ/ is considered a consonant paralleling /w y/.

Up to three consonants may occur at the beginning of a major syllable in Mal. Initial consonant clusters are:

pl			kl
py			ky
	tw	cw	kw
ph	th		kh
phl			khl
phy			khy
phw	thw		khw
mp	nt	ñc	ŋk
mpl			ŋkl
mpy			ŋky
mph	nth		ŋkh
mh	nh	ñh	
	ns		
	sw		hy
			hw
	lh		

Mal has two clusters of two consonants that can occur in final position: /-yh/ /naayh/ [na.yɨ] <นํ> 'comb'; and /-wh/ /ciawh/ [ciawW] <เลี้ยว> 'to split (bamboo)'.

VOWELS

Vowels are similar to those in Thai. They occur long (doubled) and

i	ɨ	u
e	ə	o
ɛ	a	ɔ

/i/ high, front, unrounded vocoid similar to Thai ɨ ɨ: /kiŋ/ <กิน> 'to sew'; /ʔiim/ <เต็ม> 'be full'.

/e/ mid, front, unrounded vocoid similar to Thai ɛ-ɛ ɛ-: /leh/ <เลิก> 'out'; /ʔɛen/ <เย็น> 'that'.

/ɛ/ low, front, unrounded vocoid similar to Thai ʌ-ʌ ʌ-: /mpyɛh/ <แม่ปีย> 'old'; /seem/ <เซม> 'to take care of'.

/ɨ/ high, central, unrounded vocoid similar to Thai ɨ ɨ: /kɨʔ/ <กั๊> 'head'; /ʔɨim/ <หุ้ม> 'heart'.

/ə/ mid, central, unrounded vocoid similar to Thai ɛ-ə ɛ-ə: /kəp/ <เคิบ> 'to boil'; /dəə/ <เดอ> 'at all'.

/a/ low, central, unrounded vocoid similar to Thai ʌ-ʌ ʌ-: /maʔ/ <มะ> 'snake'; /khaa/ <คา> 'fish'.

/a/ has an additional allophone: [ʌ] mid, central, open, unrounded vocoid similar to English /a/ as in *another*; occurs following [i] in the vowel cluster /-ia/ before [-k] only: /nɨɪak/ [n'thiak] <นั๊> 'wash oneself by rubbing'. [-k] following [ʌ] is not preceded by a voiced stop [g] onset: /ʔiak/ [ʔiak] <เียน> 'to defecate'.

/u/ high, back, rounded vocoid similar to Thai ʊ ʊ: /but/ <บุ> 'shirt'; /ʔuut/ <ตุ> 'star'.

/o/ mid, back, rounded vocoid similar to Thai ʊ-ʊ ʊ-: /ʔoh/ <โ> 'to steam'; /noo/ <โน> 'isn't that right'.

/ɔ/ low, back, rounded vocoid similar to Thai ɛ-ɔ ɛ-: /ʔɔh/ <อ> 'hot'; /mɔɔ/ <ม> 'stair'.

All vowels have nasalised allophones occurring when following a preceding nasal or nasal plus /h/: /nam/ [nəm] <น> 'he'; /nhlim/ [nhj.m] <นหิม> 'wedge'; /ŋeʔ/ [ŋɛʔ] <เ> 'sun', etc.

Besides the above conditions, the low vowels /ɛ a ɔ/ have nasalised allophones occurring also when following a glottal stop: /ʔɛɛ/ [ʔɛ.] <แ> 'we (inclusive)'; /ʔah/ [ʔaA] <ฮ> 'they'; /ʔɔh/ [ʔɔɔ] <อ> 'hot'. /ʔəyh-/ 'sunshine' in /ʔəyhʔaak/ [ʔəyYʔə.gk] <เ> 'sunshine' is also nasalised, sometimes probably due to anticipation of the nasalised [ɛ] in the stressed major syllable.

/i/ is nasalised after /h/: /hin/ [hjn] <น> 'in a little while'.

Other vowels may occur nasalised after /h/ when they occur in allo-

/nhɿay/ [nhɿay] or [hɿay] <เหนียว> 'be bored with'.

These vowels, when occurring alone, present no difficulties in pronunciation for the average Thai speaker. But when they occur in a number of clusters and glides, there arise several difficulties. There are four "pure" vowel clusters:

ie	ɿieh	<เอี้ยว>	'to untie'
ia	ɿiah	<เอี้ย>	'wife'
ua	ɿua	<อัว>	'before'
ɿa	lhɿa	<เลี้ยว>	'more than'

These clusters contrast with sequences

-ye-	phyeeu	<แพย>	'to reach'
-ya-	pyaa	<พาย>	'machete'
-wa-	khwaal	<ควาล>	'to prepare'

Vowel length carries a lighter functional load than it does in Thai; that is, not as many words depend on vowel length to distinguish meanings. For that reason, the criteria for interpreting vowel length is not as strong in Mal as in Thai. But the vowel clusters of /ia ua ɿa/ are sufficient to allow us to interpret long vowels as sequences of two short vowels.

kih	<กึ>	'to scratch'	kiik	<กึ>	'to set fire to'
ten	<เต>	'to cause'	seen	<เซ>	'to seine'
seh	<เซ>	'cool'	see	<เซ>	'field'
sɿh	<เซ>	'to clear off'	sɿp	<เซ>	'dirty'
kət	<เก>	'famine'	kəət	<เก>	'give birth'
way	<เว>	'hurry'	waay	<เว>	'tiger'
su?	<ซู>	'bad smelling'	cuu	<ซู>	'descent'
so?	<โซ>	'hurt'	soop	<โซ>	'to beg'
kwɿ	<คว>	'to stand'	yɿwɿ	<ย>	'path'

No long vowels occur before /ʔ/. No long vowels except /ɛ/ occur before /h/. Only two examples of /-ɛɛh/ have been heard, /neɛh/ <เน> 'clean'; /ŋkyɛɛh/ <งกย> 'landslide'. These contrast with /seh/ <เซ> 'cool'.

There is a seeming exception to the above statement, that no long vowels occur before /ʔ/, and that no long vowels except /ɛ/ occur before /h/. This is due to "extra length", an intonational feature which may be added to sentences. This may be symbolised /+/.¹ Words having short or long vowels can occur with a phoneme extra length: /leɪh+/ equals [le.ɛ] <เล> 'out'. Extra length occurs at the end of an intonational

¹See Smalley 1961:3, to which I am indebted for the symbolisation. In Filbeck 1965

contour where sentence stress occurs. There is a difference in meaning when /+/ occurs: /cak/ <ခ်> 'I'm going', /cak+/ 'Yes, I'm going'. When /+/ occurs with words with long vowels it is heard as a high rising pitch in the last word of an intonational contour: /kuut+/ <ကူတ> 'Yes, I will enter'. When /+/ occurs with words which have a cluster of two vowels, the first vowel is lengthened: /liak+/ equals [li:ak] <လီယက> 'Yes, afraid'.

TONES

There is an emergence of tones in this dialect of Mal which is an interesting but incomplete development. There are two tone phonemes, rising and level. The rising tone in this dialect appears to be an innovation used to assimilate loanwords from other languages. The level tone, then, is nothing more than the various intonational patterns found in the dialect.

There are a number of "minimal contrasts", i.e. words that differ in meaning due to tone only. /pōo/ <ပိုး> 'to converse', /poo/ <ပိုး> 'kerosene can'; /kaan/ <ကံ> 'be defeated', /kān/ <ကံ> 'work'; /cay/ <ငါး> 'to use', /cāy/ <ငါး> personal name; /caṅ/ <ငါး> 'to hire', /cāṅ/ <ငါး> 'able'.

There are also a number of words that contrast in meaning due to tone and one or two other elements. /khoo/ <ကို> 'be tired', /khōo/ <ကို> 'a bamboo hinge'; /ṅaa/ <ဦး> personal name, /ṅāk/ <ဦး> 'difficult'; /kyan/ <ကံ> 'solid', /kān/ <ကံ> 'middle'.

Other words that carry the rising tones include: /ṅōm/ <ဝမ်း> 'lonely'; /kwēt/ <ကျေ> 'to make a backfire'; /ṅāy/ <ငါး> 'easy'; /pān/ <ပံ> personal name; /ṅāam/ <ဦး> 'a type of grasshopper'; /mhōo/ <မိုး> 'doctor'; /cōy/ <ငါး> 'help'; /sanāt/ <ခဲး> 'rifle'.

Another interesting development is the extra-systemic borrowing of a few Myang (Northern Thai) words intact with their Myang tone phonemes. This is most apparent in numerals. Non-Thai numerals go only up to four. Starting with five, Myang numerals are used. The Myang tones¹ of the numerals from five to ten are [ha.²] [hok¹] [cet¹] [pēt⁴] [kaw²] [sip¹]. These tones are incorporated into the stream of Mal speech

¹Phonetically, there are seven tones in the Nan dialect of Myang: very high [1], high level [2], high falling [2-4], mid (often with a slight rise) [3], mid falling [3-4], low [4], and low rising [4-3]. However, phonemically tone [1], or very high, can be in complementary distribution with either tone [3] or tone [4], thus making six tones on the phonemic level. But for our purpose of illustrating Myang tones of numerals in Mal speech, it will be less complicated to consider them on the phonetic level of seven tones.

melody, e.g. /ʔɛɛ cak sip¹ ɔŋ/ <แฉะ ซัก ซิบ ลอง> 'We went ten people'. According to Mal intonational contour, one would expect [sip¹] to take on a low pitch, e.g. /ʔɛɛ cak phoon ɔŋ/ <แฉะ ซัก โพน ลอง> 'We go four people', where /phoon/ <โพน> 'four' has low pitch before /ɔŋ/ <ลอง> 'people', which carries a higher pitch due to sentence stress. For more discussion of tone and intonation in this Mal dialect, see Filbeck 1972.

Myang [sa.w³] 'twenty' is assimilated two ways into Mal. When the number is exactly twenty, it carries the normal Mal intonational pitches, e.g. /mooy saaw/ <โมย ซ้าว> '(one) twenty'. But in numerals from twenty-one to twenty-nine, it carries a rising tone: /sǎaw ʔet/ <ซ้าว เซ็ท> 'twenty-one', /sǎaw sǔwŋ/ <ซ้าว ซ้อง> 'twenty-two', etc.

INTONATION

An intonational pattern or contour (speech melody) is usually climaxed by a stress, which signifies the termination of the contour. In the sentence /ʔɛɛ cak sɛʔ 'ɔŋ/ <แฉะ ซัก แชะ ลอง> 'we (inclusive) many people go', the stress mark /'/ signifies the crest of the contour. The last word of the sentence is louder than the preceding words and is higher pitched.

There are three sentence stresses with accompanying pitches in Mal: /¹/ /²/ /³/. Primary stress /¹/, or sentence stress, is more prominent than secondary stress /²/ and tertiary or weak stress /³/. Secondary stress is more prominent than tertiary stress.¹ Both secondary stress and tertiary stress occur before primary stress, their number of occurrences being limited to the number of words occurring before final sentence stress. The various patterns of secondary and tertiary stresses in an intonational contour have not been fully analysed. The three sentence stresses can be illustrated in the sentence /²ʔəñ³ ʔay moɔ poŋ¹ saa/ <เชิญ อัย ผอ ปง ซ้า> 'I have not yet eaten.'

After sentence stress there may occur a secondary stress (question), /²mah³ poŋ saa¹ ʔəc² yoo/ <มะห์ ปง ซ้า เซ็ช โย> 'Have you eaten already?';

¹The reason for choosing numerals instead of the traditional stress marks is to avoid ambiguity between word level analysis of word stress (where the traditional marks are used) and sentence level analysis of sentence stress. Since word stress (of which there are two) often coalesce with sentence stress in an intonation contour, it seems more useful to maintain some type of differentiating symbolisation so that there will be no confusion which level is being analysed. Also, since sentence stress carries a "redundant" feature of pitch which often occurs over sequences of two or more words (i.e. two or more words in a sequence carry the same stress as well as the same level of pitch), it seems more useful to use a symbolisation that would

or a tertiary stress with accompanying low pitch (emphatic): /²kayh p+? ¹ʔəe ³pəʔ/ <กัย หี เอ๋ เปอะ> 'That's the way it is.'

Primary and secondary stresses each have two varying pitches according to the structure of the syllable.¹ If the syllable is open (that is, having no final consonant but ending in a long vowel or vowel cluster), or if the syllable ends in a voiced continuant (a final voiced consonant where the air stream is not impeded or cut off), the pitch is a falling pitch: /²pəe ³cak ta¹naa\ / <แปะ สะ ตานา> 'Where are you (pl.) going?'; /²ʔah ³cak ta¹kian\ / <ฮั สะ ตาเกียง> 'They went home'.²

If the syllable ends in a stop or /h/, the pitch is level, mid level for secondary stress and high level for primary stress: /²ʔāh ³kay ¹lūh/ <ฮั คัย ลุ> 'They're lying.' /²paam cuu ³səʔ ²m+an ¹ʔéc/ <ปาม ฐ แชะ เมือง เอ็จ> 'They (dual) have gone down to the Thai villages already.'

Whenever a rising tone occurs with primary or secondary stress, there is no accompanying pitch variant according to syllable structure: /²ʔəñ ³ʔay ²cāan ¹ʔəm/ <เอญ ฮัย ฉ่าง แอม> 'I'm unable to do it.' /²ʔah yaʔ ta¹ʔēen/ <ฮั ยะ ตาเอ็น> 'They placed (it) there.'

Two intonational contours can come together in a compound sentence. Each part or clause of the compound sentence carries the same type of contour, i.e. there is not a different contour for "dependent clauses" and another type for "main clauses". However, when two contours come together in a compound sentence, or when two sentences come together to make a compound sentence, there is a half-pause between the two. This is usually symbolised by a comma /,/: /²pən saa ¹ʔəc, ²ʔəe ³kəcak ta¹səe/ <ปง ซา เอ็จ, แอ ก็ สะ ตาชะ> '(When we) have eaten, we will go to the field.'

Three sentences can come together to make one sentence, two "dependent clauses" and one "main clause". However, they are very rare and their clause constructions seem to be quite restricted. Not enough data has been collected to present a clear picture of the clause construction and intonational contours.

¹Where the tone system is incompletely developed, as it is in this dialect of Mal, there is bound to be some confusion between *pitch* and *tone*. In this paper *pitch* is used to denote the relative pitch that a word has in relation to surrounding words in an overall intonational contour. *Tone* is used to denote a pitch which signals a difference in meaning regardless of surrounding words or intonation.

²Examples in this paragraph and the following are transcribed with phonetic pitch superimposed on an otherwise phonemic transcription.

SYLLABLE STRUCTURE

Major syllables consist of one or two vowels preceded by one, two, or three consonants and followed by zero, one or two consonants: C(C[C]) V(V) (C[C]). A list of possible syllable constructions follows.

CVC	/cak/	<จัก>	'go'
CCVC	/pliŋ/	<ปลิง>	'water leech'
CCCVC	/mphok/	<มพก>	'to cover over'
CVVC	/piak/	<เปียก>	'bear'
CCVVC	/kluak/	<กลวก>	'white'
CCCVVC	/khyaa/	<คยว>	'buffalo'
CVV	/naa/	<นา>	'where?'
CCVV	/khaa/	<ค>	'fish'
CCCVV	/mpyaa/	<มปย>	'chew'
CVCC	/ʔayh/	<ฮ>	'swollen'
CCVCC	/khoyh/	<คย>	'top of mountain'
CCCVCC	/ŋkhayh/	<งคย>	'to sneeze'
CVVCC	/laayh/	<ล>	'porch'
CCVCC	(no examples)		
CCCVCC	/ŋkyaayh/	<งคย>	'fingers'

In addition to major syllables, minor syllables also occur. These are syllables that occur only with weak stress. Minor syllables will have one vowel preceded by one, two or three consonants followed by zero or one consonant: (C)C(C) V (C).

CV-	/pa-/	<ป>	'classifier for long, round objects'
CCV-	/pha-/	<พ>	(meaning unknown)
CCCV-	/nthu-/	<น>	'leaf'
CVC-	/loŋ-/	<ล>	'building'
CCVC-	/khay-/	<ค>	'subjunctive'
CCCVC-	/mphuŋ-/	<ม>	'grave'

WORD STRUCTURE

Word structure consists of one major syllable with or without one (or sometimes two) preceding minor syllables. Because words contain only one major syllable, all words, regardless of number of syllables, are characterised by a single stress: /pathia?/ [pa'thia?] <ปะเทีย> 'evening'; /tabapăn/ [taba'păn] <ตาบ่าน> 'to Mr Pan'.

Two monosyllabic words, each a major syllable elsewhere, can come together to make a compound word. When this happens the first syllable

'sky', which is made up of /mphuŋ/ [m'phugŋ] <มพูŋ> 'grave' and /waŋ/ [wa.gŋ] <วŋ> 'year'. A word that occurs with a long vowel in isolation takes a short vowel in a minor syllable of a compound word: /nthuʔuaŋ/ [nthu'ʔuaŋ] <นทุวŋ> 'vegetable', from /nthuu/ [n'thu.] <นทุ> 'leaf' and /ʔuaŋ/ [ʔuaŋ] <วŋ> 'wood'. Certain Thai words when incorporated into Mal speech take on this modification: /loŋlian/ [loŋŋ'liadn] <โลŋเลี่ยน> 'school', from โรงเรียน /roŋrian/.

Word stress and sentence stress (with accompanying pitch) present a difficulty in analysis. Stressless minor syllables are lower pitched than stressed major syllables: /pathak/ [pà'thak] <ปาทัก> 'forever'; /pamuai/ [pà'muadi] <ปามวŋ> 'stick for planting rice'. Sentence stress /³/, or tertiary stress, also has a low pitch. Whenever a minor syllable occurs in the course of an intonation contour it falls in the tertiary sentence stress /³/ position: /²nam ³ʔat ta¹ɣua/ <นัม ฮัด ตาววŋ> 'He's in the village.' This also means that major syllables occurring in this same tertiary sentence stress position take on characteristics of a minor syllable, stressless and closely bound to the next following heavier stressed word (either secondary or primary). The sentence /²ʔɛɛ ³ʔay cak ¹sɛɛ/ <แอ ฮัย คัก แล> 'We aren't going to the field.' sounds like /²ʔɛɛ ³ʔàycàk¹sɛɛ/.

The criterion for writing space between /ʔay/ <ฮัย> 'not', /cak/ <คัก> 'go', and /sɛɛ/ <แล> 'field' is that these words can occur in isolation (hence with primary stress). The criterion for not writing space between /ta-/ <ต> 'at' and /ɣua/ <วŋ> 'village' in the above sentence /²nam ³ʔat ta¹ɣua/ is that /ta-/ is not a potentially free unit or morpheme in that form (i.e. it does not occur in isolation), but must always occur bound to a major syllable. In such a case, word stress and sentence stress coalesce into one intonational feature.

A THAI ORTHOGRAPHY FOR MAL

For the most part, Mal phonemes fit very well with Thai symbols. The consonants can be written as

(next page)

/k/	ก	/b/	บ
/kh/	ค	/p/	ป/ป
/ŋ/	ง	/ph/	พ
/c/	จ	/m/	ม
/s/	ซ	/y/	ย
/ñ/	ญ	/ĩ/	ร
/d/	ด	/l/	ล
/t/	ต/ต	/w/	ว
/th/	ท	/h/	ห
/n/	น	/ʔ/	อ

For /p t/, <ป ต> are used initially and <บ ต> finally, in Thai fashion. The consonants /p t k/ plus /h/ are technically a sequence of two phonemes. However, if we are to write Mal with Thai symbols, we will make a few adaptations such as to write the clusters /kh th ph/ as single symbols <ค ท พ>.

The change from Thai reading habits required above are in pronouncing final <ร> as /ĩ/, <ญ> as /ñ/, final <ล> as [d|], and final <จ> as /c/. <ญ> has a historical basis since it was pronounced as a palatal nasal in Central Thai at one time. In Northern Thai there is a /ñ/ phoneme in initial position and many Thai words written with <ญ> are pronounced with /ñ/ in Northern Thai.

Consonant clusters in Thai symbols are

/pl/	ปล	/mpy/	มปย
/py/	ปย	/mh/	มห
/phl/	พล	/nt/	นต
/phy/	พย	/nth/	นท
/phw/	พว	/nh/	นห
/thw/	ทว	/ns/	นซ
/tw/	ตว	/ñc/	ญจ
/cw/	จว	/ñh/	ญห
/kl/	กล	/ŋk/	งก
/ky/	กย	/ŋkl/	งกล
/kw/	กว	/ŋky/	งกย
/khl/	คล	/ŋkh/	งค
/khy/	คย	/lh/	ลห
/khw/	คว	/sw/	ซว
/mp/	มป	/hy/	หย
/mph/	มพ	/hw/	หว
/mpl/	มปล		

/i/	๕	/a/	-๕/-๕
/ii/	๕	/aa/	-๗
/e/	๕-๕/๕	/u/	๕
/ee/	๕-	/uu/	๕
/ɛ/	๕-๕/๕	/o/	(no symbol is used as in Thai when occurring in closed syllables, otherwise <๕-๕> is used for /-oʔ/ and <๕-๕> for /-oh/ to look like Thai)
/ɛɛ/	๕-	/oo/	๕-
/ɨ/	๕	/ɔ/	๕-๗๕/-๑
/ɨɨ/	๕๑/๕	/ɔɔ/	-๑
/ə/	๕-๑๕/๕		
/əə/	๕-๑/๕		

Diphthongs are

/ia/	๕๕	/uy/	๕๕
/iw/	๕๗	/uuy/	๕๕
/iaw/	๕๕๗	/ua/	๕๗/๑๗-
/eew/	๕-๗	/uay/	-๗๕
/ɨa/	๕๑	/oy/	(<๕-๕> is used since /-oy-/ only occurs pre- ceding /h/)
/ɨay/	๕๑๕	/ooy/	๕-๕
/əy/	๕-๕	/ɔy/	(<-๑๕> is used since /-ɔy-/ only occurs pre- ceding /h/)
/ay/	๕-	/ɔɔy/	-๑๕
/aay/	-๗๕		

Suggested orthography for diphthongs unique to Mal is

/iĩ/	๕๕	/əĩ/	๕๕๕
/ie/	๕๕๕	/aĩ/	๕๕
/iaĩ/	๕๕๕๕	/aaĩ/	-๗๕
		/uĩ/	๕๕
/eeĩ/	๕-๕	/oĩ/	๕-๕
/ɨĩ/	๕๕	/ɔɔĩ/	-๑๕

Since a number of Thai vowels and diphthongs are written in an "orbit" circling the consonant(s), syllables whose initial consonant clusters begin with a nasal /m n ñ ŋ/ present some difficulties in writing. For these syllables we first experimented writing such vowels and diphthongs in orbit around the second consonant, or second and third consonant if there was one, e.g. /mpliah/ <มเปลียบ> 'floor' with /m/ <ม> outside the orbit and /p/ <ป> within it. Reaction to this method has been mixed. Some of those who can read Thai have said words written in this manner are recognisable, but others have criticised it by saying that vowel

/mpiaŋ/	เมเปียง	'split bamboo'
/mpliah/	เมปสียห	'floor'
/mpyɛɛ/	แมปย	'rat'
/mpheĩ/	เมพิร	'to throw a fish net'
/mhiaŋ/	เมหียง	'tea'
/ntiet/	เนตียต	'to thresh'
/nthoʔ/	โนทะ	'sound'
/nseĩ/	เนซึร	'wall'
/ŋcoop/	ญูจบ	'shade'
/ŋkeh/	แงกีห	'type of frog'
/ŋkhayh/	งคห	'sneeze'

The consonant clusters /lh hy hw/ may be written the same way. /lhŋaŋ/ <เลห็อง> 'yellow', /hwǎy/ <หวัย> 'to pay homage'.

Rising tone may simply be written with the <ˊ>, /lǎam/ <ล้าม> 'messenger', or it may be best to ignore it in the writing system because of its marginal nature and low functional load. It is written in this paper.

Another practical problem lies in the writing of the sequence /ŋu..../ because /u uu/ <ุ ู> are written below the line in Thai script, and /ŋ/ <ญ> already has an element below the line. Thus, /ŋuaʔ ʔuuŋ ŋuum seek/ 'Rice has big pod(s)' comes out as <งัวะ อุย ญูม เซ็ก>.

Further experimentation with a Thai orthography is being carried on. Early reactions indicated that readers with some education in Thai preferred the use of <ล> over <ฬ>. However, in actual literacy work, <ล> has been confused with <ล> and <ล> by non-literates. For this reason <ฬ> is chosen to write /s/, along with the fact that in Thai it is a low class consonant and is read with mid tone, in keeping with the Mal system of tone as strictly a marginal phenomenon. <ล>, however, is more common in Thai, and some readers seem to prefer it for that reason.

No literature is yet extant for this dialect or any other dialect of Mal. There is already a potential reading audience in three villages. However, these three villages represent three different but mutually understandable dialects. To prepare reading material for these, one would possibly have to write the material in each of the three dialects. In the village of Ban Pha Nam Yoi there are several school children who can read Thai. In other dialects east of us schools have been established longer and no doubt there are a greater number of readers but again, dialectal differences of a more serious nature prevent them from using material written in other dialects.

²Read /...khay¹thooc/ as [...khày¹tho.ydt]. [khày-] "subjunctive" is not potentially a free form. It must always occur bound to a stress form or major syllable. As a minor syllable it is pronounced on the same pitch level that accompanies tertiary

²laa ¹ntuŋ 17. ²laa ntuŋ luac, ³?ɛɛ ko ²lo? ¹toɔ 18. ³?ay
 ลา นตุง ลา นตุง ลวจ แอ ก็ โละ ตอ ใจ
the field. Left the field we then rest. There

?uuɣ ²kʰaŋ ma¹?ee
 อุย กำน มะเอ
is no work.

CHAPTER TEN

KUY

BEULAH M. JOHNSTON

The Kuy people, or Suay (ส่วย) as they are called by the Thai, live in a broad dogleg-shaped area stretching from the northeastern tip of Buri Ram Province, east in a slightly southerly direction across Surin Province, and barely across the border into Si Sa Ket Province, then due south to the Cambodian border and into Cambodia.¹ In Si Sa Ket Province there are also large pockets in Khu Khan District, as well as smaller pockets scattered throughout the entire province. In April 1954, as a result of a fairly extensive survey, we estimated the population at 150,000 in Thailand alone. Accurate estimates of the Kuy population in Cambodia and Laos are not available.

The Kuy language is Mon-Khmer, related to Northern Khmer (Chapter 3), also spoken widely in Surin and Si Sa Ket Provinces. In Thailand there are two principal dialects of Kuy - Kuy Kuy and Kuy Mla - with innumerable sub-dialects showing marked differences in pronunciation and occasional differences in vocabulary. The two principal dialects are pretty well mutually intelligible. Our research has been exclusively in the Kuy Kuy dialect.

This paper is based on research done during 1955-8, and off-and-on during 1960-2, in the process of learning the language. The two main informants have been Leng Burakhon and Nip Burakhon. Both young ladies (late teens and early twenties during the period of investigation) are Kuy, who have lived their entire lives in Samrong Thap Village, Samrong

¹References to the Kuy may be found in Seidenfaden 1952, 1958:115-16; LeBar *et al.* 1964:159. Johnston 1969 is the 200-word Swadesh basic vocabulary list.

Thap District, Surin Province. Leng had completed fourth grade in the government school in Samrong Thap, but Nip had completed only third grade by the time she reached the minimum age limit and quit school.

CONSONANTS

	Bilabial	Alveolar	Alveo- palatal	Velar	Glottal
<i>Voiced stops</i>	b	d	j		
<i>Voiceless unaspirated stops</i>	p	t	c	k	ʔ
<i>Voiceless aspirated stops</i>	ph	th	ch	kh	
<i>Voiceless fricatives</i>	f	s			h
<i>Nasals</i>	m	n	ɲ	ŋ	
<i>Lateral</i>		l			
<i>Trill</i>		r			
<i>Semi-vowels</i>	w		y		

Fig. 1. Chart of consonant phonemes

The Kuy phonemes /b d/ are similar to Thai บ ด. In addition, there is a voiced alveopalatal stop /j/, which is not found in the Thai system of phonemes. All of these appear in initial position as single consonants:

- /buh/ [buU] <บุ> 'to burn'
 /dooy/ [dooy] <โดย> 'rice (cooked)'
 /jih/ [jiI] <จิ> 'to sew'

Kuy /p t c k ʔ/ are similar to Thai ป ต จ ก อ. All these consonants appear in initial position as single consonants:

- /poo/ [poo] <โป> 'to heal'
 /tee/ [tee] <เต> 'hand'
 /caw/ [caw] <จ> 'to come'
 /kuu/ [kuu] <กู> 'to be located'
 /ʔii/ [ʔii] <ฮ> 'to hurt'

Four of these stops /p t c k/ have a *slightly* aspirated allophone, which occurs before breathy vowels (see below):

- /pʰuŋ/ [pʰuŋ] <พุง> 'abdomen'
 /tʰèè/ [tʰèè] <เต> 'no'
 /cʰi:/ [cʰi:] <จี้> 'fertilizer'
 /kʰà/ [kʰà] <ข> 'tree'

All five of the voiceless unaspirated stops also occur syllable final:

- /kap/ [kap] <กบ> 'to bite'
 /kat/ [kat] <กต> 'to stick (as of fruit to a tree)'

/kac/ [kayc] <กัจ> 'to harvest (rice)'
 /lǎ̀k/ [lǎ̀k] <ล๋าก> 'cocoon'
 /biiʔ/ [biiʔ] <บื๋> 'little bit'

Vowels preceding final /c/ are pronounced with an intervening [y]:
 /ñaac/ [ñaaɥc] <ญาก> 'small-waisted'.

Voiceless aspirated stops /ph th ch kh/ are similar to Thai พ ท ช ค. Like Thai, they occur in initial position. We interpret them as single consonants. Aspiration is heavier than that of /p t c k/ before breathy vowels (above):

/phoom/ [phoom]¹ <โพม> 'to be fragrant'
 /thee/ [thee] <เท> 'to be thick (as hair) or crowded (as forest)'
 /chuu/ [chuuU] <ชู่> 'to plane'
 /khal/ [khal] <คัล> 'water-dipper'

The voiceless fricatives /f s h/ are similar to Thai ฟ ช ฮ. (/f/ is used only in loan words.) They occur in initial position:

/fayfaa/ [fayfaa] <ฟัยฟา> 'electricity'
 /soʔ/ [soʔ] <โซ> 'village'
 /haa/ [hǎǎ] <ฮา> 'to open (mouth)'

In addition, /h/, unlike its Thai counterpart, occurs in syllable-final position: /buh/ [buU] <บุ> 'to burn'.

The phoneme /h/ has several allophones; one set occurs syllable final and has the voiceless quality of the preceding voiced vowel:

/ʔuh/ [ʔuU] <อุ> 'fire'
 /wìh/ [wìI] <วื> 'to turn'
 /phlah/ [phlaA] <พล> 'to change (clothes)'
 /hnoh/ [ʔnNnoO] <ฮน> 'nest'

[ʔmM ʔnN ʔñÑ] occur preceding voiced nasals at the same point of articulation:

/hmee/ [ʔmMmee] <เหม> 'to steam'
 /hnoh/ [ʔnNnoO] <ฮน> 'nest'
 /hñee/ [ʔñÑnee] <เญ> 'to wake up'

[L W Y] occur preceding /l w y/:

/hlaap/ [Llaap] <หลาบ> 'wing'
 /hwiih/ [WwiiI] <หวิ> 'nicked (dishes, glasses, etc.)'
 /hyay/ [Yyay] <ฮัย> 'village chief'

The nasal phonemes /m n ŋ/ are similar to Thai ม น ง. In addition, there is the alveopalatal nasal /ñ/ which does not occur in standard

¹Because of the need to show two degrees of aspiration in phonetic writing we adopt the convention of showing the slight aspiration before breathy vowels by a raised [h], but the full aspiration of regularly aspirated stops by [h] on the line.

Thai. All four nasals occur as single consonants in initial and final syllable position:

/mìà/	[ʔmìà]	<เมื่อย>	'rain'
/nààw/	[ʔnààw]	<น่า>	'he, she, they'
/ñaac/	[ñaac]	<น้อย>	'small-waisted'
/ŋut/	[ŋut]	<จุก>	'sawed-off, runtish'
/phoom/	[phoom]	<หอม>	'to be fragrant'
/pèèn/	[pèèn]	<เย็น>	'noon'
/pañ/	[pañ]	<ยิง>	'to shoot'
/seɛŋ/	[seɛŋ]	<ลง>	'to go down'

Vowels preceding final /ñ/ are pronounced with an intervening [y]:
/mpɿɔɔñ/ [ʔmpɿɔɔyñ] <มุด> 'to run'. The non-phonemic pre-glottalisation to be seen in some of the above examples is described below.

Lateral /l/ is similar to Thai ล. It has two allophones: [l] is reflexed and occurs syllable final where Thai has no counterpart. [l̥] is at the alveolar point of articulation and occurs elsewhere:

/daal/	[daal̥]	<ด่า>	'much, many'
/luu/	[luu]	<ลู>	'to bay, howl'

Trill /r/ is similar to Thai ร, both in pronunciation, and in the weakness of contrast with /l/. Unlike Thai, it occurs in final as well as initial position in the dialect of the "purists":¹

/ràc/	[ràc]	<ระ>	'to cut (with a knife)'
/kamɔɔr/	[kamɔɔr]	<กระ>	'young lady'

Semi-vowels /w y/ are similar to Thai ว ย, and like their Thai counterparts occur in initial and final positions:

/wìh/	[wìh]	<หิว>	'to turn'
/nààw/	[ʔnààw]	<น่า>	'he, she, they'
/yʌt/	[yʌt]	<ยัด>	'to arch (bow)'
/kapay/	[kapay]	<กะ>	'woman'

In addition to the above, the consonants occur in clusters in the following patterns (next page):

¹Many people use [l] and [r] interchangeably in initial position and in clusters with bilabial and velar consonants. In such cases, [r] is always used in clusters with alveolar stops; [l] is always used in clusters with /n/ and in final position. Many other people use [l] exclusively, except in clusters with alveolar stops. The occasional "purist" has two distinct phonemes in initial and final position, and in clusters with bilabial and velar consonants.

bl ¹				
br				
pl			kl	
pr	tr		kr	
phl			khl	
mb	nd	ñj		
mp	nt	ñc	ŋk	ŋʔ
mph	nth	ñch	ŋkh	
ml	nl			
mr	nn			
	ns			ŋh
			ŋw	
hm	hn	hñ		
	hl			
hw		hy		
mbI				
mpl			ŋkl	
mpr	ntr		ŋkr	
mphI				
mphr				
hml				

Stop + continuant:

/bleeŋ/	[bleeŋ]	<แปลง>	'arm'
/breeŋ/	[breeŋ]	<แปลง>	'shrivelled, dry'
/plaa/	[plaa]	<ปลา>	'sharp-edged'
/praʔ/	[praʔ]	<ปละ>	'silver, money'
/phlah/	[phlaA]	<พลัฮ>	'to change (clothes)'
/tram/	[tram]	<ตรัม>	'to soak'
/klaah/	[klaaA]	<กลาฮ>	'comb'
/kreeŋ/	[kreeŋ]	<เกลง>	'to be mature (fruit or people)'
/khleeŋ/	[khleeŋ]	<แคลง>	'kite'

Nasal + stop: In all combinations of nasal plus one or more other consonants, there is a pre-glottalisation which is completely predictable.

/mbeel/	[ʔmbeel]	<เมบล>	'comb of chicken'
/mpay/	[ʔmpay]	<ม-pay>	'fleas'

¹On all clusters with /l r/ see footnote on previous page.

/mphuun/	[ʔmphuun]	<มพูน>	'some kind of wild animal'
/ndaaw/	[ʔndaaw]	<นดาว>	'shadow'
/ntaaʔ/	[ʔntaaʔ]	<นตาค>	'tongue'
/nthaaʔ/	[ʔnthaaʔ]	<นทา>	'tray for food'
/ñjah/	[ʔñjaʔ]	<ญจ>	'to step'
/ñceɛŋ/	[ʔñceɛŋ]	<ญจ>	'to shine light'
/ñcheɛŋ/	[ʔñcheɛŋ]	<ญจ>	'fat, oil (animal)'
/ŋkat/	[ʔŋkat]	<งก>	'to press'
/ŋkhaan/	[ʔŋkhaan]	<งค>	'to be about to (do something)'
/ŋʔam/	[ʔŋʔam]	<งอ>	'warm'

Nasal + other continuant:

/mlaaw/	[ʔmlaaw]	<มล>	'to hand over'
/mraa/	[ʔmraa]	<ม>	'shaman'
/nlaʔh/	[ʔnlaʔh]	<นล>	'east'
/nsaaʔ/	[ʔnsaaʔ]	<น>	'to name a child'
/ŋhaay/	[ʔŋhaay]	<ง>	'far'
/ŋwaaʔ/	[ʔŋwaaʔ]	<ง>	'valley'

Double n: /nnlaʔŋ/ [ʔnnlaʔŋ] <น> 'sun'

h + nasal:

/hmeɛ/	[ʔhmeɛ]	<เหม>	'to steam (transitive)'
/hnoh/	[ʔhnoh]	<หน>	'nest'
/hñee/	[ʔhñee]	<เห>	'to wake up (intransitive)'

h + other continuant:

/hlaa/	[ʔhlaa]	<หล>	'leaves'
/hwiih/	[ʔhwiih]	<ห>	'nicked (dishes, glasses, etc.)'
/hyay/	[ʔhyay]	<ห>	'village chief'

Nasal + stop + continuant:

/mbliat/	[ʔmbliat]	<มบล>	'to "pick" at food'
/mprawh/	[ʔmprawh]	<มปร>	'to run'
/mplèèʔ/	[ʔmplèèʔ]	<มปล>	'a carrying pole'
/mphlee/	[ʔmphlee]	<มพล>	'to be similar in sound'
/mphrac/	[ʔmphrac]	<มพล>	'last child in family'
/ntruun/	[ʔntruun]	<นตร>	'to shake, agitate'
/ŋkleŋ/	[ʔŋkleŋ]	<งกล>	'little bell-ornament on loom'
/ŋkraaŋ/	[ʔŋkraaŋ]	<งคร>	'to carry (by two or more people)'

h + m + l:

/hml/	/hml/	[ʔhml]	<หมล>	'to whet'
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VOWELS

	Front unrounded	Back unrounded	Back rounded
<i>High</i>	i	ɨ	u
<i>Mid</i>	e	ə	o
<i>Mid-low</i>	ɛ	ʌ	ɔ
<i>Low</i>	a		ɑ

Fig. 2. Chart of vowel positions (high register)

As can be seen from the chart above, there are two more vowel positions in Kuy than there are in Thai. The mid back unrounded vowel /ə/ is very slightly higher than Thai เ-อ, while the mid-low back unrounded vowel /ʌ/ is considerably lower. Similarly, the mid-low back rounded vowel /ɔ/ in Kuy is slightly higher than the corresponding Thai -อ, while the low back rounded vowel /ɑ/ is considerably lower.

This full range of positions is used only in the long vowels, which are here represented as sequences of identical vowels:

/ʔii/	[ʔii]	<ฮื>	'to hurt'
/tee/	[tee]	<เต>	'hand'
/bleɛŋ/	[bleɛŋ]	<แบลง>	'arm'
/haa/	[hǎǎ]	<ฮา>	'to open mouth'
/bɨɨn/	[bɨɨn]	<บีน>	'can, be able, past tense'
/hǎǎ/	[ʔǎǎhǎǎ]	<เฮญอ>	'to wake up (intransitive)'
/kaat/	[kaat]	<กัต>	'to be, to have, to be born'
/kuu/	[kuu]	<กู>	'to be located'
/mprɔɔŋ/	[ʔmprɔɔŋ]	<มปลอญ>	'to run'
/ŋkhaan/	[ʔŋkhaan]	<งคฮาน>	'to be about (to do something)'

Short vowels, symbolised by single vowel symbols, do not show this full range of contrasts. Neutralisation takes place between [e ɛ] to produce what we will write with /ɛ/, and [ə ʌ] to produce /ʌ/. [o ɔ] are likewise neutralised except before /ʔ/.

i	/jih/	[jih]	<จิฮ>	'to sew'
e ɛ	/ŋkleŋ/	[ʔŋkleŋ]	<นงกลีง>	'little bell-ornament on loom'
a	/caw/	[caw]	<จาว>	'to come'
ɨ	/mɨŋ/	[mɨŋ]	<มีญ>	'pointed'
ə ʌ	/yat/	[yat]	<เยียด>	'to arch (bow)'
u	/buh/	[buh]	<บูฮ>	'to burn'
o	/soʔ/	[soʔ]	<โซฮ>	'village'
ɔ	/soʔ/	[soʔ]	<โซฮ>	'hair'
ɑ	/saʔ/	[saʔ]	<แซฮ>	'to touch'

The vowel system of Kuy occurs in two registers. The high register, illustrated above, is pronounced with varying degrees of stricture in the pharyngeal cavity, faucalisation (tightening and narrowing of the faucal pillars at the entrance to the throat), etc. This gives a relatively tense, tight "bright" acoustic effect. The low register is produced by a relatively open pharyngeal cavity, and a breathy quality of vowel produced by the configuration of the vocal cords. The lower register gives the impression of lower pitch also, and is interpreted as low tone by Kuy who know how to read and write Thai. A two-register system occurs frequently in Mon-Khmer languages.¹

In Kuy low register breathiness never occurs in syllables beginning with voiceless aspirated stops, either singly or in clusters, but does occur in syllables beginning with all other consonants. Voiceless un-aspirated stops /p t c k/ followed by low register vowels take on a very slight aspiration.

p	/pə̀ə̀/	[pʰə̀ə̀]	<ເຜົ່າ>	'to see'
t	/tùù/	[tʰùù]	<ຫຸ້ນ>	'to carry on head'
c	/càà/	[cʰàà]	<ກຳລ>	'rubber, gum'
k	/kòò/	[kʰòò]	<ໂຂ>	'cow, ox'
ʔ	/ʔà/	[ʔà]	<ເຮືອນ>	'measles'

Single nasal consonants followed by a breathy vowel become slightly preglottalised.

m	/màà/	[ʔmàà]	<ກຳລ>	'thing'
n	/nààw/	[ʔnààw]	<ນ້າ>	'he, she'
ŋ	/ŋà/	[ʔŋà]	<ຫຸ້ນ>	'to stuff'
ŋ	/ŋàc/	[ʔŋàc]	<ນ້ຳ>	'to drink'

Low register single vowels so far recorded show the same neutralisations as for the high register system described above, except that the neutralisation of [ò ò] is complete. We represent the neutralised pair by /ò/:

ì	/cì/	[cʰì]	<ອີ>	'all'
è	/lèh/	[lèh]	<ເສື້ອ>	'to die'
à	/kà/	[kʰà]	<ໜ້າ>	'tree'
໓	/lì/	[lì]	<ສິ່ງ>	'in, with'
ò	/lò/	[lò]	<ເສື້ອ>	'at all'
ù	/ʔanù/	[ʔanù]	<ອາບຸ>	'father'

¹Shorto (1962), for example, records two registers. Henderson (1952) describes a register distinction in one of her Khmer informants, but from her description the phenomenon might seem to be a precise "reading pronunciation". Certainly a register system does seem to be indicated for an older stage of Khmer on which the writing system is based.

ò ò	/kamòh/ [kamòɔ]	<กะม่อ>	'do not pay attention'
à	/lǎh/ [lǎɔ]	<ล่อ>	'(to go) out'

The set of low register double vowels is complete:

/mìin/	[mìin]	<มีน>	'to prepare'
/tèè/	[tʰèè]	<เต>	'no'
/mplèèʔ/	[ʔmpʰlèèʔ]	<म्मผล่>	'a carrying pole'
/nààw/	[ʔnààw]	<น่า>	'he, she, they'
/pǎtǎt/	[pʰǎtǎt]	<ผิด>	'big'
/pǎèʔ/	[pʰǎèʔ]	<แผ่>	'to see'
/tǎlǎn/	[tʰǎlǎn]	<ถิ่น>	'again'
/mùùɣ/	[ʔmùùɣ]	<มួយ>	'one'
/pòòm/	[pʰòòm]	<โผล่ม>	'sprouts'
/mpòòt/	[ʔmpʰòòt]	<ม่อต>	'to squat or kneel down'
/lǎk/	[lǎk]	<ล่อ>	'cocoon'

HETEROGENEOUS VOWEL COMBINATIONS

The cluster /ia/ occurs with the following allophones:

[ie] occurs before /c ɲ y/:¹

/bliǎɲ/	[bliɛɲ]	<เบสียญ>	'ribs'
/bliay/	[bliɛy]	<เบสีย>	'to be light-complexioned'

[io] occurs before /w/:

/haatdiaw/	[haatdiow]	<ฮาดเตียว>	name of bird
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[ia] occurs elsewhere, as in:

/mbliǎl/	[ʔmbliǎl]	<เมบสียล>	'to "pick" at food'
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On low register a parallel distribution of allophones occurs:

/lǎc/	[lǎɛc]	<เลี้ย>	'plain'
/lǎɲ/	[lǎɛɲ]	<เลี้ยญ>	'to melt'
/nǎy/	[ʔnǎɛy]	<เนี้ย>	'master'
/lǎw/	[lǎɛw]	<เลี้ยว>	'to wash'
/mǎn/	[ʔmǎɛn]	<เมี้ยน>	'to mold'

/ua/ and /ùǎ/ are likewise parallel insofar as we have data.

[ue] and [ùè] occur before /c y/:²

/lùǎc/	[lùɛɛc]	<ลั่ว>	'intestines'
/buay/	[buey]	<บวย>	'to look for'
/rùǎy/	[rùɛɛy]	<ลั่ว>	'hundred'

¹We have no example of /iac/, but presumably if it occurred it would follow the same pattern. See the low register parallel described in the next paragraph.

²/uac/ does not occur in our data. Neither do /uaɲ ùǎɲ/, which presumably would follow this pattern if they did.

[ua] and [ùà] occur elsewhere, as in

/bua?/ [bua?] <๒๒> 'white'
 /lùà?/ [lùà?] <๒๒> 'pretty'

SYLLABLE STRUCTURE

Syllables in Kuy are of two principal types - major syllables, which may carry full sentence stress, and minor syllables, which may not. Minor syllables are often the presyllables of polysyllabic words, but may also constitute independent morphemes themselves when these morphemes are not stressed.

Major syllables consist of any initial consonant or consonant cluster followed by one or two vowels, and with or without a final consonant. If there is no final consonant the syllable must end with two vowels, not one. The permitted final consonants are /p t c k ʔ m n ñ ŋ l h w y/.

CVV	/kuu/	[kuu]	<๒>	'to be located'
CCVV	/plaa/	[plaa]	<๒๒>	'sharp'
CCCVV	/ntrùù/	[ʔntrùù]	<๒๒>	'deep'
CVVC	/kaan/	[kaan]	<๒๒>	'child'
CCVVC	/bliang/	[bliang]	<๒๒>	'to be light'
CCCVVC	/ntrùùy/	[ʔntrùùy]	<๒๒>	'chicken'
CVC	/kap/	[kap]	<๒>	'to bite'
CCVC	/ñcàl/	[ʔñcàl]	<๒>	'near'
CCCVC	/ŋklɛŋ/	[ʔŋklɛŋ]	<๒>	'little bell ornament on loom'

Minor syllables begin with single consonants only, not with clusters. With very few exceptions, polysyllabic words consist of a minor syllable consisting of /k t s ʔ/ + /a/ followed by a major syllable. In some dialects the initial consonant may also be /c/.

/kaʔaap/	[kaʔaap]	<๒>	'to be fun, comfortable, well'
/taŋay/	[taŋay]	<๒>	'day'
/sakaac/	[sakaac]	<๒>	'sand'
/ʔabia/	[ʔabia]	<๒>	'two'
/caʔaap/	[caʔaap]	<๒>	'to be fun, etc.'

A few polysyllabic words begin with two minor syllables.

/salabiat/	[salabiat]	<๒>	'chief of demons'
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Minor syllables which are independent morphemes may have the following forms:

CV	/kə/	[kə]	<๒>	Thai ๒ (clause-linking particle)
CVV	/paa/	[paa]	<๒>	'at' as in <i>at home</i> , <i>along</i>

CVC	/ciŋ/	[ciŋ]	<ฉิ่ง>	'willl'
CVVC	/paay/	[paay]	<ปาย>	'saying, that' (Thai ว่า)

SPELLING KUY WITH THAI CHARACTERS

The following system of representing Kuy phonemes with Thai written symbols has been adopted.

Consonants

ก	/k/ + high register vowel	น	/n/
ข	/k/ + low register vowel	บ	/b/
ค	/kh/	ป	/p/ + high register vowel
จ	/ŋ/	ผ	/p/ + low register vowel
ฉ	/c/ + high register vowel	พ	/p/ final
ช	/c/ + low register vowel	ฟ	/ph/
ซ	/ch/	ฝ	/f/
ส	/s/	ม	/m/
ญ	/ñ/	ย	/y/
ฉ	/j/	ร	/r/ after /t th/ and in borrowed names only
ด	/d/	ล	/l/
ต	/t/ + high register vowel	ว	/w/
ถ	/t/ + low register vowel	ห	/ʔ/ final after long vowel ¹
ด	/t/ final	อ	/ʔ/ syllable initial
ท	/th/	ฮ	/h/

Short (Single) Vowels

ิ	i	เ-อ	ə A followed by /ʔ/
เอ-ะ	e ɛ followed by /ʔ/	เ-ย	followed by /y/
แ-ะ	elsewhere	เ-อ	elsewhere
-ะ	a followed by /ʔ/	ุ	u
เ-า	followed by /w/	โ-ะ	o followed by /ʔ/
-ะ	elsewhere	เ-า	ɔ followed by /ʔ/
เ-ะ	+	-ะ	o ɔ elsewhere
		แ-า	a followed by /ʔ/
		-อ-	elsewhere

¹For /ʔ/ final after a short vowel see the list of vowels below.

Vowel Clusters

ᵀ	ii		ᵀ	uu
ᵀ-	ee		ᵀ-	oo
ᵀ-	εε		-ᵀ	ɔɔ
-ᵀ	aa		-ᵀ	aa
ᵀᵀ	++ syllable final		ᵀᵀ	ia followed by /ʔ/
ᵀ	elsewhere		ᵀᵀ	elsewhere
ᵀ-ᵀ	ee syllable final		-ᵀᵀ	ua followed by /ʔ/
ᵀ-ᵀ	followed by /y/		-ᵀ	syllable-final
ᵀ	elsewhere		-ᵀ-	elsewhere
ᵀ-ᵀ	aa syllable final			
ᵀ-ᵀ	followed by /y/			
ᵀ	elsewhere			

The Kuy themselves associate low register with low tone. Informants themselves requested that the high class symbols <ᵀ ᵀ ᵀ ᵀ> be used for /p t c k/ respectively when they are followed by low register vowels. Where the low register vowels follow any other consonant, <'> is placed over the consonant without changing the consonant symbol.

The orthography corresponds nicely with Thai, except for the following problems:

/j/ There is no voiced alveopalatal stop in Thai, so we have borrowed the little-used symbol for /d/ <ᵀ>.

/ñ/ There is no alveopalatal nasal in Thai, but the Northeastern Lao pronounces as /ñ/ many of the Thai words which are spelled with a ᵀ (e.g. ᵀᵀᵀ, ᵀᵀᵀ etc.).

The glottal stop does not occur in Thai after a long vowel. It was necessary to invent a symbol. We chose <ᵀ>.

The symbol for /aa/ was invented by analogy. Since /ee/ is written as ᵀ- in Thai, and /εε/ is written as ᵀ-; and since /əə/ is written as ᵀ-ᵀ (open syllable) and ᵀ- (closed syllable), we write /aa/ as <ᵀ-ᵀ> and <ᵀ-ᵀ>.

The digraphs invented for /a, aa/ are completely arbitrary, indicating sounds approximately "between" /ɔ, ɔɔ/ and /a, aa/, that is, between -ᵀ and -ᵀ in Thai.

There are now about fifty people, most of them young people, who can read Kuy with varying degrees of fluency. Those who read Thai (and to date they are the only ones who have learned to read Kuy) feel somewhat uncomfortable with the un-Thai consonant clusters and vowel combinations. But they are usually satisfied as soon as the system is explained to them. A mimeographed edition of the entire New Testament has been

produced, as have primers, an entire series of literacy selections and booklets of hymns. All the materials are used extensively in meetings and classes.

SAMPLE TEXT

kʌʌt ʔiɕaa? mʉ̀y nàw buay caa ʔakaa kuu paa llǎc-sɛɛ
 เกิด ญาคอห้ มួយ น้าว บวย จา อะกา ญ ปา เลี้ยจแซ
have fox one he look-for eat fish located along field
(Once) there was a fox who was looking for fish in the fields.

mʉ̀y taŋay nàw bɪn caa ʔakaa pɪtɪt pɪtɪt
 มួយ ตะย น้าว บิน จา อะกา ผัด ๆ
one day he past tense eat fish very big
One day he ate a very big fish.

nàw bɪn haɔ? ŋhaan ʔakaa
 น้าว บิน ฮาอ ห้าง จา อะกา
he past tense choke bone fish
He choked on a fish bone.

kày pu? diŋ ciŋ wuà na? nà ciŋ caa naɔ
 ยัย ุ ดิง จิง วัว นะ เนี้ย จิง จา นอ
that not know will do how will eat anything (what)
He didn't know what to do. He would not be able to eat

tʌʌn koo pu? bɪn phro? ŋhaan ʔakaa klà̌m
 แถ่น ก๊ ุ บิน เพราะ ห้าง จา อะกา เข้ม
again (part.), (also) not be able because bone fish stuck
any more because the fish bone was caught in his throat.

kuu lɪŋ plà̌n kaa? mʉ̀y taŋay nàw
 ญ ลึง ผล้อง จาห้ มួយ ตะย น้าว
located in hole-neck (throat) one day he
One day he

sii pòè? cɛɛm haatdiaw buay caa klɔɔ kuu
 ซี เป้ห์ แฉม ฮาตเตียว บวย จา กลอ ญ
looks see bird name of (stork-like) bird look-for eat snails located
saw a stork-like bird looking for snails.

nàw ciŋ cii buay cɛɛm haatdiaw ʔaan
 น้าว จิง ซี บวย แฉม ฮาตเตียว ฮาน
he part (then) go look-for bird name of bird have
So he went to the bird to have him

ʔɛɛ ɲhaaŋ ʔakaa ləh luu pləŋ kaaʔ nààw
 แอ งฮาง อะกา ล้อฮ ลู ผล่อง กอาห์ น้าว
take bone fish out from hole-neck (throat) his
take the fish bone out of his throat.

nààw wààw paay nààw ciŋ caaŋ
 น้าว ว่าว ปาย น้าว จิง จาง
he said that he will hire
He said he would pay him.

ceem haatdiaw sii pə̀əʔ naʔ kày koo jəʔjial
 แคม ฮาตเตียว ซี เฒ่ห์ นะ ชัย ก็ เฒาะเฒียล
bird (name of bird) look see like that part. pity
(When) the bird saw (the situation) he felt sorry (for the fox).

nààw ciŋ ʔɛɛ kabaah ʔàt seə pləŋ kaaʔ khaŋ
 น้าว จิง แอ กะบาช ฏัด เซอ ผล่อง กอาห์ ค้อง
he part. take bill stuff put in hole - neck belonging
So he stuck his bill down the fox's throat.

ʔcaaʔ kày nə̀ə nààw ciŋ ɲkeem
 ญจอาห์ ชัย เน่ น้าว จิง แงคม
fox that time sequence (then) he part. hold in bill
Then he took the fish bone out of the fox's throat.

ʔɛɛ ɲhaaŋ ʔakaa ləh luu pləŋ kaaʔ ʔcaaʔ
 แอ งฮาง อะกา ล้อฮ ลู ผล่อง กอาห์ ญจอาห์
take bone fish out from hole - neck fox

CHAPTER ELEVEN

LAVÜA' (LAWA, LUA')

DONALD SCHLATTER

The Lavüa' /lɔv+əʔ/ <ลาว້າ> are called Lua' and Lawa (ลาว ลาว้า) by the Myang (Northern Thai) and Thai respectively. Their language is of the Mon-Khmer group, closely related to the Mal (Chapter 9) and Khmu' languages of Thailand and Laos, and to the Wa of Burma.¹ Lavüa' is spoken in the area southwest of Chiang Mai in both Mae Hong Son and Chiang Mai Provinces. It is with this area that we are familiar. Other peoples also called Lawa are found in Kanchanaburi and Petchabun Provinces and possibly other areas, but we have made no comparison between the languages or dialects.

In the Mae Hong Son-Chiang Mai area most of the Lavüa' speakers are located in Mae Sariang and Hot Districts, with a few in Mae Chaem. These people have a number of dialects some of which are almost mutually unintelligible. Almost every village has some variance of dialect but close villages have no trouble with the differences. A rather large difference exists between the Lavüa' of Baw Luang area and their nearest neighbours in Mae Sariang Province, the Lavüa' of Umphai and Chang Maw villages. For this paper the dialect used will be the La-Up dialect which is understood by most speakers in Mae Sariang District.

Research on the Lavüa' language has been going on from 1953 until the present. Eugene Nelson and Charles Week first began the analysis and developed the first orthography. Later I entered the work among the Lavüa' in 1956. A number of informants were used during this time, but

¹See LeBar *et al.* 1964:120-1; Young 1962:50-6; Hutchinson 1945:153-82. Recently extensive anthropological study of the Lavüa' has been done by Kunstadter (1967, 1969, and references cited there).

chiefly Tha of La-Up, who worked with us consistently. His knowledge of both Thai and Karen have been of inestimable help.

CONSONANT PHONEMES

Lavüa' consonants may be charted as follows:

p	t	c	k	ʔ
b	d	j	g	
m	n	ɲ	ŋ	
f	s			h
	l			
	r			
w		y		

/p t c k/ are voiceless stops very similar to Thai ป ต จ ก respectively: /pat/ <ปัด> 'to flow', /tam/ <ต้ม> 'a crab', /coŋ/ <โคง> 'a corner', /koŋ/ <โคง> 'to be spotted'.

/ʔ/ is like the catch in the throat (glottal stop) in the middle of Thai สะอาด /saʔaat/ 'clean' as against Thai สาด /sàat/ 'splash': /saʔ/ <ชะ> 'to curse', /ʔah/ <ฮ> 'to speak'.

/b d j g/ are phonetically [mb nd ɲj ŋg]. They have no exact counterpart in Thai. However /b d/ are similar to Thai บ ด, with the addition of a strong prenasalisation: /boŋ/ <โบบ> 'a ladder or steps', /dak/ <ดัก> 'the tongue', /jaim/ <จ๊อ> 'a finger ring', /giʔ/ <จ> 'pine (tree) or pitch'.

/m n ŋ/ are similar to Thai ม น ง: /maʔ/ <มะ> 'mother', /naɲ/ <นญ> 'sister-in-law (younger)', /ŋɔ/ <ง> 'fire'.

/ɲ/ has no counterpart in standard Thai, but does in Myang (Northern Thai) /ɲǎŋ/ 'what': /ɲiəʔ/ <เหือ> 'a house'.

/f s h/ are similar to Thai ฟ ช ฮ: /fiəʔ/ <เฟือ> 'a monkey', /saŋ/ <ซ> 'an elephant', /hɛ/ <ฮ> 'a bee'.

/l/ is similar to Thai ล: /lan/ <ล> 'an ear ornament'.

/r/ is somewhat similar to Thai ร (when spoken by Thai speakers who make a difference between ร and ล), but is more sharply flapped than by speakers of Thai who use it: /riəŋ/ <เรียง> 'to be strong, a vulture'.

/w y/ are similar to Thai ฎ ย. (/w/ more closely corresponds to English v than Thai ฎ as spoken by Central Thais. Some Myang speakers use a similar sound as in เรียง 'city'.) /wɔm/ <ว> 'hat', /yɪəm/ <เยอ> 'to cry'.

All of these occur in initial position, as illustrated above. In addition a variety of consonant clusters occur in this position in major syllables.

/ph th ch kh/ are like Thai พ ท ช ค respectively: /pha/ <พา> 'to pass', /thak/ <ทัก> 'to chip wood or smooth with knife', /cha/ <ชา> 'cymbals', /khoʔ/ <โคะ> 'wood, tree'.

/hm hn hŋ/ are voiceless nasals which have no counterpart in Thai: /hma/ <ฮมา> 'bamboo strips for tying', /hnaŋ/ <ฮนัง> 'necklace', /hŋwʔ/ <ฮงวะ> 'rice'.

/hl hr/ are a voiceless lateral and flap respectively. They have no counterpart in Thai: /hlaʔ/ <ฮละ> 'leaf', /hrang/ <ฮริง> 'eye tooth'.

/hy/ is a voiceless high front non-syllabic vocoid which has no counterpart in Thai: /hyuək/ <ฮยวาก> 'ear'.

/ʔb ʔd/ are preglottalised, sometimes implosive voiced stops. Frequently Thai /b d/ บ ด are pronounced in this fashion by some speakers, but not in contrast to any non-preglottalised phoneme: /ʔbak/ <บัก> 'frog', /ʔdɔŋ/ <ดอง> 'house post'.

/ʔm ʔn ʔñ ʔŋ/ are preglottalised nasals, with no counterpart in Thai: /ʔmaʔ/ <มะ> 'to break', /ʔnɔŋ/ <นอง> 'forest', /ʔñu/ <ญ> 'spirit ceremony house', /ʔŋiəŋ/ <เญียง> 'to be short'.

/ʔl/ is a preglottalised lateral, with no counterpart in Thai: /ʔlai/ <ไล> 'squirrel'.

/ʔy/ is a preglottalised high front non-syllabic vocoid, with no counterpart in Thai: /ʔyuəŋ/ <ยวอง> 'village'.

/pl kl kw/ are similar to Thai ปล กล กว: /plɔŋ/ <ปลอง> 'roofing grass', /klɔŋ/ <โคลง> 'a stream, river', /kwat/ <กวัด> 'to scrape off, to skim'.

/bl gl br gr/ have no Thai counterparts: /blak/ <บลัก> 'a bat', /gloʔ/ <โหละ> 'a mud hole', /broŋ/ <บรอง> 'a horse', /gro/ <กรอ> 'instead of'.

/phl khl phr khr khw/ are similar to Thai พล คล พร คร คว: /phluk/ <พลุก> 'ivory', /khl+ək/ <เคลือก> 'to lick', /phruʔ/ <พร> 'a blanket', /khrak/ <ครัก> 'water buffalo', /khwen/ <ควน> 'district officer'.

Consonant phonemes in final position are limited in our present analysis to /p t c k ʔ m n ñ ŋ h/. There are no clusters in final position: /kap/ <ก> 'chin', /kat/ <กัต> 'thorn', /chic/ <ฉิ> 'paddy field', /kak/ <ก> 'limb, branch', /kaʔ/ <กะ> 'fish', /kam/ <กัม> 'bran', /kan/ <ก> 'work', /chiñ/ <ฉิญ> 'to sew', /kaŋ/ <ก> 'to be confused', /kah/ <ก> 'to untie'.

VOWEL PHONEMES

Simple vowels are as follows:

i	ɪ	u
e	e	o
ɛ	a	ɔ

These are similar to Thai long vowels, $\text{= ɛ̄ ɛ̄ ɛ̄ ɛ̄ ɛ̄ ɛ̄ ɛ̄ ɛ̄}$, except when preceding /ʔ/, when they have more the approximate quality of Thai short vowels, $\text{= ɛ̄ ɛ̄ ɛ̄ ɛ̄ ɛ̄ ɛ̄ ɛ̄ ɛ̄}$. /pi/ <ป> 'to be tired', /piʔ/ <ป> 'goat', /tɪ/ <ติ> 'all', /khɪʔ/ <คิ> 'splendid, magnificent', /tu/ <ตุ> 'to be shallow', /tuʔ/ <ตุ> 'banana bud', /so/ <โซ> 'to water', /soʔ/ <โซ> 'to be sick', /ve/ <เว> 'pants', /yɛʔ/ <เย> 'great grandmother', /te/ <เต> 'to plunder', /teʔ/ <เต> 'hand', /me/ <เม> 'question word', /meʔ/ <เม> 'command word', /ha/ <หา> 'plague', /haʔ/ <หา> 'to burn', /so/ <โซ> 'wildcat', /soʔ/ <โซ> 'dog'.

In addition, there is a variety of vowel clusters, consisting phonetically usually of vowel glides. These may be divided into three groups. The first group consists of those vowel clusters which may occur before consonants, with minor limitations:

ie	ɪe	ue
ei	ai	ɔi
eo	eɪ	
ao	aɪ	

/ie ɪe ue/ are similar to Thai = ɛ̄ ɛ̄ ɛ̄ ɛ̄ . /ie ɪe/ may occur finally in a syllable or before all final consonants except the palatal consonants /c ɲ/: /lia/ <เลีย> 'wire', /ʔɲiəʔ/ <ญีย> 'small (amount)', /chiən/ <เชียน> 'heavy', /ɪte/ <เล็> 'to be bold', /ɲiəʔ/ <ญีย> 'house', /kɪəŋ/ <เก็> 'rat'. /ue/ does not occur before /h/. /bue/ <บัว> 'to leak', /ʔueʔ/ <ญีย> 'to try to vomit', /tuek/ <ตว> 'rice tray'.

/ai ɔi ao/ are similar to Thai = ɛ̄ ɛ̄ ɛ̄ ɛ̄ . Each may occur in syllable final position. Unlike Thai, /ao/ may be followed by all final consonants except /c ɲ/, and /ai ɔi/ may be followed by /p c ʔ m ɲ h/: /hai/ <หา> 'to recover', /haiʔ/ <หา> 'to be disorderly', /paih/ <ป> 'to sweep', /ʔmɔi/ <ม> 'axe', /ʔɲɔiʔ/ <ญ> 'sound made by buffalo', /hɔiɲ/ <ฮ> 'to be tame', /soih/ <ซ> 'charcoal', /kao/ <หา> 'ten', /kaoʔ/ <หา> 'centre, beginning', /haon/ <หา> 'edible root'.

/ei eo eɪ aɪ/ have no Thai counterparts: /tei/ <เต> 'to light (lamp)', /teiʔ/ <เต> 'to blame', /reim/ <เร> 'termite', /peo/ <โป> 'to fly', /peoʔ/ <โป> 'to wake up', /peoh/ <โป> 'to discard', /keɪ/ <เก> 'dove', /leɪəʔ/ <เล> 'stupid', /seɪp/ <เซ> 'to become worse', /təɪ/

<ตํ> 'field house', /ta+?/ <ตํ> 'probably', /?la+n/ <ตํ> 'place denuded of trees'.

Whereas the first group, presented above, clearly patterns as vowel cluster, the other phonetic glides present more of a problem, with conflicting pressures. Group two includes phonetic [ui oi], similar in pronunciation to Thai -ย -ย. As in some other languages of this area (e.g. Chapters 3, 9, 10) [ui oi] often come either in final position or before /c ñ/. However in the Lavüa' case, they come before /h/ also. /u o uə/ do not occur before /ñ c/, but contrast before /h/ as in /koh/ <โห> 'to rise', /koih/ <โห> 'to cook', /phruh/ <พห> 'to multiply', /puih/ <พห> 'to carry'. Of the various interpretations possible we choose to consider these sequences to be /ui oi/ wherever they occur. This certainly makes the greatest sense for writing in Thai script, and in the light of the analogies of vowel clusters in the first group seems a permissible, though possibly not ideal, phonemic solution. /pui/ <พห> 'person', /puic/ <พห> 'the top of a tree', /goi/ <โห> 'to be silent', /koih/ <โห> 'to cook'.

In this group also is [uəi] which is even more problematical. It occurs only before /c ñ h/ and in final position, whereas /uə/ as defined never occurs before these consonants. It is tempting to interpret [uəi] as /uəy/ in final position and /uə/ before /c ñ/. However, this would constitute the only occurrence of final /y/ in this analysis. It is phonetically similar to Thai -ย. For the purposes of this analysis we therefore interpret [uəi] in all positions as /uə/: /muə/ <มย> 'wild ox', /fuəc/ <พม> 'to finish'.

The third group of vowel clusters consists of [iu eo əo] (similar to Thai -ย -ย -ย) which do not occur before final consonants, except for [əo] which rarely occurs before /?/. The pressures therefore are very strong to consider these to be /iw ew əw/ respectively. For our purposes here we prefer, however, to treat these as vowel clusters by analogy with group one, and to avoid the introduction of a /w/ in final position for these three vowels. There is no /y/ in that position by this analysis: /phiu/ <พห> 'to evaporate', /keo/ <โห> 'to be concerned', /meo/ <มย> 'cat', /təo?/ <ตย> 'little'.

Vowel length and tone are not phonemically contrastive in Lavüa'. Intonation patterns have not been extensively analysed.

SYLLABLE AND WORD STRUCTURE

Major syllables (those capable of carrying stress) are constructed in the following patterns:

CV	/sa/	<ซำ>	'to slice'
CVV	/tai/	<ตี่>	'field house'
VC	/ɛk/	<แอก>	'cross bow'
VVC	/aot/	<อาวต>	'to be located'
CVC	/sak/	<ซัก>	'to be full (of food)'
CVVC	/kaip/	<ไคป>	'to pinch'
CCV	/hlo/	<ฮล>	'protrude'
CCVV	/kləo/	<โกล>	'unclear speech'
CCVC	/kloŋ/	<โกลง>	'stream'
CCVVC	/broic/	<โบริ>	'chillies'
CCCV	/phre/	<เพ>	'brother'
CCCVV	/khrao/	<คร>	'a granary'
CCVC	/phraŋ/	<พร>	'roof'
CCCVVC	/phraop/	<พร>	'quick'

When morphemes are not monosyllabic the initial syllable is made up of an unstressed minor syllable which is almost always /sə pə kə rə lə/ except in borrowed words. /səpiə/ <เซเปีย> 'light', /pəkhreih/ <เพเครือ> 'unmarried girl', /kəʔaot/ <กาอ> 'place of residence', /rəsep/ <เรเซ> 'to whisper', /ləpiʔ/ <ลปี> 'shirt'. Some common exceptions to this statement are /aləh/ <อาล> 'seven', /soʔkoʔ/ <โสะโก> 'to take care of'. Trisyllabic words are very rare, and are usually compounds: /pərepeon/ <เพเรเพ> 'woman', which is made up of /pə/ 'who, which', and /repeon/ <เรเพ> 'female'.

Consonant clusters of which the initial element is /ʔ/ (preglottalised consonants) do not occur in initial position of the major syllables of a word of more than one syllable except in borrowed words such as /səʔbaɪ/ <เซบ> 'well, happy' (from Thai สวย). The Lavüa' speaker borrows [b d] from other languages as /ʔb ʔd/.¹

THAI ORTHOGRAPHY FOR LAVÜA'

The Thai orthography for Lavüa' can be seen below. A few problems require special discussion. In two syllable words the vowel of the minor syllable /ə/ is predictable, and not written. For the vowels of major syllables we have used the Thai short vowel form with /ʔ/ in Lavüa' when there is a final /ʔ/. Otherwise we have used the Thai long vowel form. This is because the sounds are closer this way, transfer value is increased, and the complications of Thai transcription are lessened.

¹A parallel phenomenon exists in Khmu' where (according to William A. Smalley) [b d] are borrowed as /ʔm ʔn/.

For complex vowels some new forms have had to be devised because Thai did not have enough. These are obvious from the chart.

Five consonant symbols have been changed from Thai usage to fit Lavüa' consonants. Most of these changes are not of a type to cause confusion. Two symbols are seldom used in Thai writing (<ฌ> used for Lavüa' /j/ and <ฌ> used for Lavüa' /g/). A third (<ฌ> for /ñ/) is often used in this way in writing Northern Thai in Thai script. <๗> is used for Lavüa' /b/ which is pronounced [mb] and <๓> for Lavüa' /d/ which is pronounced [nd]. In addition Thai <'> is used in Lavüa' not to indicate tone, but to indicate a cluster like /ʔb ʔd ʔm/ etc.

Consonants	Thai symbols	Consonants	Thai symbols
k	ก	l	ล
kh	ค	y	ย
ŋ	ง	w [v]	ว
c	จ	ʔ	อ
ch	ช	h	ฮ
s	ซ	j [nj]	ฌ
d [nd]	ด	ñ	ญ
t	ต	g [ŋg]	ฌ
th	ท	ʔd	๓
n	น	ʔb	๗
b [mb]	บ	ʔn	ฌ
p	ป	ʔm	ฌ
ph	พ	ʔŋ	ฌ
f	ฟ	ʔl	ล
m	ม	ʔy	ย
ʃ	ร	ʔñ	ญ

Vowels	Thai symbols	Vowels	Thai symbols
a a?	า -า	ao ao?	อา -อา
i i?	อ -อ	oi oi?	ออ -ออ
ɨ ɨ?	อ -อ	eo eo?	เออ -เออ
u u?	อ -อ	ei ei?	เออ -เออ
e e?	เอ -เอ	aɨ aɨ?	เออ -เออ
ɛ ɛ?	เอ -เอ	əɨ əɨ?	เออ -เออ
o o?	อ -อ	uɛ uɛ?	อ -อ
ɔ ɔ?	อ -อ	eo oi	เออ -เออ
ə ə?	เอ -เอ	iu	อ -อ
iə iə?	เออ -เออ	ui	อ -อ
ɨə ɨə?	เออ -เออ		
uə uə?	อ -อ		
ai ai?	อ -อ		

At the present time more than 300 Lavüa' can read their language in Thai orthography, at least to some degree. Those who can read Thai have no difficulty in reading their own language in Thai script. Those who read Lavüa' have found learning to read Thai very simple after mastering their own language first. Several boys who moved from mountain villages down to the plains and entered Thai schools finished first in their class after only one year in Thai school. We are satisfied that the orthography meets the needs of the Lavüa' who will most certainly be moving more and more into the orbit of Thai educational systems.

Primers have been published in Lavüa' using the Thai script. Reading sheets have been published regularly and articles on health, sanitation, geography, and various current events have been made available. The New Testament has been published, as has a hymn book.

TEXT

kai pui phraim go? ?laŋ. həo rə?aom. mah kuən doi. həo
ไก ฟูบ ไพราม โฆะ ลัง. โฮว รอวาม. มีอ กวน ดอย. โฮว
Have person ancient long ago. Went water. Was orphan. Went

rə?aom ?mai hməo tɛ? həon. kuən doi se hloh təo kiñ meĩñ tɛ?.
รอวาม ไม โอมว ตตะ โฮวน. กวน ดอย เซ โฮลล โตว กัญ เม็ญ ตตะ.
water with friends her many. Orphan that get not fill tube her.

peoh pui meĩñ †. həo a† meĩñ tɛ? se. həo neh. həo
โปวอ ฟูบ เม็ญ ฮี. โฮว อกี เม็ญ ตตะ เซ. โฮว เนฮ. โฮว
Threw people tube her. Went chase tube her that. Went still. Went

a† meĩñ tɛ? se, hɔic kə seh. həo neh, həo neh.
อกี เม็ญ ตตะ เซ, ฮอยจ ก เซฮ. โฮว เนฮ, โฮว เนฮ.
chase tube her that, came place south. Went still, went still.

khre†p təo meĩñ tɛ?. kang khe? hɔic la? ?yuəŋ ñak.
เครฮีป โตว เม็ญ ตตะ. กัง เคะ ฮอยจ ละ ยัวง ญัก.
Overtake not tube her. Afterwards came to village giant's.

†h, ñ†m to? ya†?, lə?wih to? ya†?, ah sə la †.
ฮีฮ, ญัม โตะ ยากี ลอยฮ โตะ ยากี, ฮฮ เซ ละ ฮี.
Aha, delicious meat mine, oily meat mine, said that to her.

yeh, ta? y†ə?, pu? ah neh tɔk se, pen kuən so?
เยฮ, ตะ เฮอะ, ฟู ฮฮ เนฮ ตอก เซ, เปน กวน โชะ
Oh, grandfather grandmother, don't say still like that, be grandchild

pe? gro +. eiñ kuen so?. eiñ ?mai ta?
 เปอะ พรอ อี้. เอ็ญ กวน โหะ. เอ็ญ ไม่ ตะ
your instead it. Go home, grandchild. Go home with grandfather

?mai y+e? se.
 ไม่ เอ็อะ เช.
and grandmother that.

CHAPTER TWELVE

URAK LAWOI' (ORANG LAUT)

DAVID W. HOGAN

0. INTRODUCTION

Urak Lawoi' /ʔurak lawuc/ (Orang Laut) is a language spoken by animistic people of Malayan stock found on islands off the west coast of South Thailand from Phuket Island down to Adang Island, west of Satun (Hogan 1972). Urak Lawoi' is related to the Malay language but is not easily mutually intelligible with it. This language has not been studied before, nor has any literature been produced in it.¹

At an early stage in the study of this language a tentative orthography was prepared, using the letters of the Thai alphabet. After some experimentation, a workable form of this orthography was evolved. Primers were prepared in an endeavour to teach the Urak Lawoi' to read, but to date none have shown any interest in this. Another primer was prepared to help Urak Lawoi' who can read Thai to read their own language also. It has been found that they can make this adaptation with a minimum of instruction. They readily understand some Bible stories which have been published in their language. (See also note on p. 302.)

¹The material on which this analysis is based was transcribed on information supplied principally by Wong of Ko Sireh village, Meuang District, Phuket Province, Thailand, in the latter half of 1967 and since November 1968. Some of the material was recorded on tape and the analysis checked with the help of David and Dorothy Thomas and Kemp and Anne Pallesen of the Summer Institute of Linguistics in Auckland in early 1968. The present form of this paper was evolved in discussion with William A. Smalley of the United Bible Societies, who has given much valuable advice based on similar problems in related languages. The following publications and unpublished papers have been particularly helpful as I prepared this paper: Cooper and Cooper 1966; Haas 1956; Lewis 1947; Noss 1964; Pike 1947; Sopher 1965; Watson 1964; Wilkinson 1948.

There is a slight variation between the dialect of Urak Lawoi' spoken on Phuket and Phi Phi Islands and that spoken on the other islands. In addition, the younger generation on Phuket Island consistently pronounce some phonemes differently from the older generation. In both cases the differences are minor and well-known to all speakers, involving only the syllables ending with /i/. This paper discusses only the pronunciation used by the older generation on Phuket, as the orthography based on this dialect will be usable throughout the tribe.

1. SYLLABLE AND WORD STRUCTURE

1.1 THE SYLLABLE

There are three types of syllable which have been termed *main syllable*, *minor syllable*, and *pre-syllable*. These different types of syllable occur in different parts of the word, and are differentiated by their structure, by their final consonants, and by their stress. The main syllable is obligatory and final in every word and has a greater variety of final consonants than do other types of syllables. The minor syllable is optional and is more restricted as to final consonants. When both minor and main syllables occur, the stress falls evenly on both in citation form. The pre-syllable has only a vocalic transition, has no final consonant or stress, and is optional. Apparent consonant clusters have been interpreted as pre-syllables (section 1.1.3).

1.1.1 Main syllables

Every word must have one main syllable which always occurs last. Its structure shows the following patterns:

CV /pi/ <ပီ> 'to go'
CVC /caʔ/ <ချ> 'that...'

Main syllables have been recorded ending with the consonants /p t c k ʔ s h m n ŋ l w y/ (section 2.4.2). In open syllables the vowels /a i u/ predominate with limited occurrences of the other vowels (section 3.3.1). In closed syllables, all the vowels except /ɨ/ occur, with the vowels /a i u/ predominating (section 3.3.1).

1.1.2 Minor syllables

A word may have one or two minor syllables before the main syllable. These minor syllables may have the following structure:

CV /kañaw/ <ကၢၤဃၢ> '2nd person pronoun'
CVC /waʔtu/ <ဘၢတူ> 'time'

In the open syllables the vowels /a i u ɨ/ predominate with only a

few occurrences of /e o/ (section 3.3.2). It is difficult to be sure whether a non-main syllable with [ɨ] is a minor syllable or a pre-syllable. The difference lies in the potential for a stress on a minor syllable: /pɨmɨlaw/ <ป้อมเลา> 'word'.

The closed syllable pattern CVC is rare in minor syllables. The only final consonants occurring in such a syllable are a nasal /m n ŋ/ or the stops /k ʔ/ (section 2.4.2). There are not sufficient occurrences of this syllable pattern to enable any conclusions as to the vowels which may appear in it.

1.1.3 Pre-syllables

A word may have one or possibly two pre-syllables before the main syllable. The pre-syllable does not have a contrastive vowel but may or may not have a non-contrasting vocalic transition to the following syllable. For the practical purposes of this paper this transition, or its potential, is symbolised in a rough approximation of its usual pronunciation in its various environments, as follows:

(1) No symbol when the initial consonant of the pre-syllable sounds like a consonant cluster with a following /r/:

/prahu/ <ปราชู> 'boat'

/crɨmen/ <ครือเหม็น> 'glass'

(2) ʊ in words in which the transition sounds like [ʊ] before /w/ when they occur in phrase-final position:

/ʔɨya/ <ฮีย> 'little girl'

(3) ɨ in words in which the transition sounds like [ɨ] before /y/ when they occur in phrase-final position:

/sɨmɨya/ <ฮิมฮีย> 'man'

(4) ɨ elsewhere:

/sɨnaŋ/ <ฮินาง> 'comfortable, easy'

/bɨli/ <บลิ> 'buy'

/mɨnati/ <มินาติ> 'waits'

The amount of transition, its vocalic clarity, length and prominence is conditioned by the speed and rhythm of the phrase and ranges from zero to weak stress equivalent to the normal stress of a minor syllable in a word which is in phrase-final position:

/ʔada pɨmɨlaw/ <อาดา ป้อมเลา> - [ʔada pɨmɨlaw baŋaʔ] 'has many words'

- [ʔada pɨmɨlaw] 'has a word'

1.2 WORD STRUCTURE

1.2.1 Normal word structure

Unless reduplication or compounding (patterns of which are not fully

clear) should create exceptions, words have one, two or three syllables. Every word must have one main syllable and may optionally have one or two syllables preceding the main syllable, which may be either minor syllables or pre-syllables, in varying combinations. A list of typical words follows.

Main syllable only	/ca?/	<คะ>	'that...'
Minor + Main	/maso?/	<มาโอะ>	'enter'
Pre-syllable + Main	/mʔlaw/	<มีเล>	'speaks'
Minor + Pre- + Main	/pɪmʔlaw/	<ป้อมมีเล>	'word'
Pre- + Pre- + Main	/mʔbʔleh/	<มีบมีเล>	'gets'
Pre- + Minor + Main	/tʔlaga/	<ดีลา>	'a well'
Minor + Minor + Main	/radara/	<ราดารา>	'young woman'

1.2.2 Reduplication

This takes at least two forms. In some cases there is a simple repetition of the original word. In other cases the basic word is preceded by a repetition of its final syllable, as if originally it was a simple repetition as above and then the first syllable was dropped.

/sunoh/	<ซุน>	'sure'	-	/sunoh-sunoh/	<ซุนซุน>	'truly'
/bini/	<บิ>	'wife'	-	/nibini/	<นิบิ>	'woman'

1.2.3 Compound words

Compounding occurs as in the word /sipaku/ <ซิปาก> 'a nail', which is derived from /bʔsi paku/ <บิซิปาก> 'iron nail'. The majority of the compound words recorded have been compounds of various words with the word /sa?/ <ซ> 'one'. When this word precedes a numerical classifier or a number word, compounding occurs with /sa?/ becoming a pre-syllable /sʔ/ with the following allomorphs:

{sʔ-}	[sʔ- ~ sʔ- ~ sʔ-]
[sʔ-]	occurs preceding /ʔu/. [sʔʔurak] <ซิปาก> 'one man'
[sʔ-]	occurs preceding /ʔi/. [sʔʔikol] <ซิปาก> 'one tail'
[sʔ-]	occurs elsewhere. [sʔʔari] <ซิปาก> 'one day', [sʔʔuloh] <ซิปาก> 'ten'

1.2.4 Affixation

There are three inflectional affixes which are prefixed to verbs, and two nominalising prefixes which change a verb into a noun.

Inflectional prefixes:

/mʔ-/	<มี>	'active prefix',	/mʔnati/	<มีนา>	'waits for'
/bɪ-/	<บิ>	'reflexive prefix',	/bɪmarch/	<บิมา>	'coming'
/tɪ-/	<ดี>	'completive prefix',	/tɪkʔjuc/	<ดีก>	'startled'

Nominalising prefixes:

/pʰ-/ <ປີ> 'prefix creating a noun showing the agent or instrument of the action of the verb', /suroh/ <ສູ່ຮົ່ອ> 'to send' - /pʰñuroh/ <ປີຮົ່ອ> 'messenger'

/pʰ-/ <ປີ> 'prefix creating a noun showing the result of the action of the verb', /mʰlaw/ <ມີເລາ> 'to speak' - /pʰmʰlaw/ <ປີມີເລາ> 'a word'

2. CONSONANTS

2.1 CONSONANTAL PHONEMES

Urak Lawoi' has 23 consonantal phonemes as set out in Figure 1.

	Bilabial	Alveolar	Alveo- palatal	Velar	Glottal
Stops					
<i>Voiceless aspirated</i>	ph	th	ch	kh	
<i>Voiceless unaspirated</i>	p	t	c	k	ʔ
<i>Voiced</i>	b	d	j	g	
Fricatives		s			h
Nasals	m	n	ɲ	ŋ	
Lateral		l			
Semi-vowels	w	r	y		

Fig. 1. Urak Lawoi' consonant phonemes

2.2 PROBLEMS OF INTERPRETATION

2.2.1 Aspirated stops [ph th ch kh]

There is a series of voiceless aspirated stops [ph th ch kh] in syllable-initial position which could be interpreted either as a single consonant or as a cluster of two consonants. There are very few occurrences of these stops, many of them in words cognate with words in Thai, which has such a set of stops. The pattern of Urak Lawoi' syllables has no non-suspicious consonant clusters. Therefore these aspirated stops have been interpreted as unit phonemes /ph th ch kh/.

2.2.2 Voiced alveo-palatal stop [j]

Urak Lawoi' has a voiced alveo-palatal stop [j] which has no counterpart in Thai. Word-medially there is a clear contrast between /j/ and /y/ as seen in:

/baju/ <บาจู> 'shirt'	/kayu/ <กายู> 'wood'
/baji?/ <บาฉิ> 'good'	/?aye/ <อาเย> 'water'
/?ajal/ <อาฉ้อ> 'teach'	/layal/ <ลาโย> 'sail'
/hijaw/ <ฮีฉา> 'green'	/sɤmiya/ <ซีมียา> 'man'

There is some fluctuation in the pronunciation of this phoneme when occurring word-initially, sometimes being pronounced [j] and sometimes [ɣ]. The younger generation has a greater tendency towards the [ɣ] pronunciation, while some older speakers fluctuate between the two alternatives: [jalat] or [ɣalat] /jalat/ <ฉาสัด> 'path, way'.

2.2.3 Alveo-palatal nasal [ɲ]

Urak Lawoi' has an alveo-palatal nasal [ɲ] which could be interpreted as one consonant or as two. It can occur syllable-initially either at the beginning or in the middle of a word, and there are no non-suspicious consonant clusters having /ɣ/ as the second member. This nasal has therefore been interpreted as a single consonant: /ɲawa/ <ฉาวา> 'body'.

2.2.4 Frictionless [l r]

/l/ is alveolar in initial position and in final position except after /ɛ a u ɔ/, where it is blade-palatal [-l]: /lihe/ [-l] <ลีฮี> 'neck', /bumɔ/ [-l] <บูมอ> 'doctor'.

Alveolar /r/ occurs syllable-initially. It also frequently occurs as syllabic [ɾ] in a minor syllable (or perhaps a pre-syllable) following another consonant. In this position this pronunciation of CɾC- varies with Cr+C- and C+rC-. In any case the combination is interpreted as a pre-syllable followed by /r+/ (section 1.1.3[1]). Typical words are /crɪmen/ <ครือเหม็น> 'glass', /krɪja/ <กรือฉา> 'work', /srɪma/ <สรือมา> 'a cold'.

2.2.5 Syllable-final [vi?]

Urak Lawoi' has main syllables ending with [-ai? -ui? -oi? -ɔi?]. Where the cognate Malay word is known it ends with <-at -ut -ot>:

UL - [surai?]	<ซูไร>	'book'	Malay - surat
[tɪkɤjui?]	<ตีอกีฉุ>	'startled'	terkejut
[proi?]	<โปรอิ>	'stomach'	perut
[roi?]	<รือ>	'reach'	-

From a phonemic viewpoint it seems that [-i?] in these combinations acts as a single phonetically-complex phoneme and can be regarded as the syllable-final allophone of /c/ which, otherwise, does not appear syllable-finally.

It will be noted that this final /c/ does not occur with the front vowels /i e ε/. It would seem that there has been phonetic assimilation of any such forms into the simpler forms [-i? -e? -ε?]. Supporting this is the fact that of the Urak Lawoi' words ending with a front vowel plus a glottal, some Malay cognates end with a front vowel plus <k> and some with a front vowel plus <t>:

UL - [bali?]	<บาลี>	'return'	Malay - balek
[diki?]	<ดิกิ>	'small'	sedikit
[cape?]	<คาเป>	'crippled'	capek

2.2.6 Syllable-final [Vih]

Syllable-final [Vih] occurs in the combinations [-aih -uih -oih -ɔih] in contrast with syllables ending in [-ah -uh -oh]. The Malay words cognate to the first group end with <-as -us -os>, while those cognate to the second group end with <-ah -uh -oh>:

UL - [ʔataih]	<อาต่า>	'upon'	Malay - atas
[ratuih]	<ราตู่>	'hundred'	ratus
[krɪmɔih]	<ครีมอ>	'dirty'	cemuas
[patah]	<ปาต่า>	'break'	patah
[tɨdoh]	<ตี่ดอ>	'calm'	tedoh
[bunoh]	<บูนอ>	'kill'	bunuh

Syllable-final [Vih] in these combinations has therefore been interpreted as a single phonetically-complex phoneme and as being the syllable-final allophone of /s/, which otherwise does not occur syllable-finally.

It will be noted that this final /s/ does not occur after the front vowels /i e ε/. It would seem that here too there has been phonetic assimilation of any such forms into the simpler forms [-ih -eh -ɛh]. This is supported by the fact that, of the Urak Lawoi' words ending with a front vowel followed by /h/, some Malay cognates end with a front vowel followed by <h> and some with a front vowel followed by <s>:

UL - /tuleh/	<ตุลื่อ>	'write'	Malay - tulis
/lɨbeh/	<ลื่อ>	'more'	lebeh
/jɨneh/	<จื่อ>	'kind'	jenis

2.2.7 Semi-vocoids [w y]

Syllable-initially these are definitely consonants. Syllable-finally they occur as the second member of a vocoid-cluster, so in view of the permissible syllable pattern of CVC they are interpreted as being consonants there also: /kañaw/ <กาญ่า> '2nd person pronoun', /suray/

<ជួរម> 'comb'.

2.2.8 The glottal stop [ʔ]

Syllable-finally the glottal is definitely contrastive as shown by /siyak/ <ជ័យក> 'daylight', /siyaʔ/ <ជ័យះ> 'prepare', /ʔya/ <ឆ័យ> 'little girl'. Syllable-initially words occur with or without an initial glottal stop if they have no other consonant. Alternatively the onset may be a slight glottal constriction. The glottal is clearly retained when following the final vowel of a preceding syllable. It seems easiest to analyse the cases where glottal is not present in syllable initial position as having been deleted.

no initial glottal:	[aye]	<ឧយ>	'water'
light initial glottal:	[ʔataih]	<ឧត្ថៃ>	'upon'
heavy initial glottal:	[ʔakeʔ]	<ឧកេ>	'lift'
glottal after vowel:	[mataʔari]	<មាតាឧរី>	'sun'

2.3 CONSONANTAL DESCRIPTIONS AND CONTRASTS

2.3.1 Stops

The stops and their major phonetic characteristics can be seen from Fig. 1. These all occur syllable-initially, but only the voiceless unaspirated stops /p t c k ʔ/ occur syllable-finally. In this position they are unreleased.

When /c/ occurs syllable-finally it has the allophone [-iʔ] (section 2.2.5): /surac/ [suraiʔ] <ស្រុក> 'a book'. After a front vowel the velar unaspirated stop /k/ is sometimes pronounced as an affricated stop [kx] at the same point of articulation: /kamek/ [kamekx] <កាដេក> 'a sheep'.

When the bilabial stops /p b/ occur initially in a syllable with a back vowel followed by the stop /c/ the allophones [pw bw] may appear: /sipoc/ [sipwoiʔ] <ស៊ីប៉េក> 'shell', /sʔboc/ [sʔbwoiʔ] <ស៊ីប៉េក> 'to utter'.

The voiceless unaspirated stops contrast syllable-initially and finally:

/p/	/paʔ/	<ប>	'father'	/dalap/	<តាត្រប់>	'deep'
/t/	/taʔ/	<ត>	'after'	/jalat/	<ជាត្រាត>	'path, way'
/c/	/caʔ/	<ត>	'that...'	/lihac/	<ឆ័យក>	'see'
/k/	/kaʔ/	<ក>	'to'	/hilak/	<ឆ័យក>	'lost'
/ʔ/	/ʔakeʔ/	<ឧកេ>	'lift'	/craʔ/	<ត្រះ>	'light'

The voiced stops contrast syllable-initially:

/b/	/bumol/	<បូម៉ូល>	'doctor'
/d/	/dʔniya/	<ឆ័យន័យ>	'world'
/j/	/jalat/	<ជាត្រាត>	'path, way'
/g/	/gati/	<កាត្រាត>	'in place of'

The voiceless aspirated stops contrast syllable-initially:

/ph/	/phriŋan/	<พริ่งัน>	'a kind of fish'
/th/	/bɰthol/	<บ็หือ>	'front room'
/ch/	/bɰchi/	<บ็ช>	'hate'
/kh/	/khru/	<ครู>	'teacher'

Other contrasts between the stops are as follows:

/p b/	/tɰpac/	<ต๊ป>	'place'	/tɰbeʔ/	<ต๊อเบ>	'ascend'
	/pala/	<ปาลา>	'head'	/baliʔ/	<บาลี>	'come back'
/t d/	/talap/	<ตาลับ>	'sink'	/dalap/	<ดาลับ>	'deep'
	/tet/	<เต็ด>	'not'	/deʔ/	<เด>	'at, in'
/c j/	/careʔ/	<จาเร>	'tell'	/jadi/	<จาดี>	'become'
	/cucu/	<จูลู>	'grandson'	/juga/	<จูหา>	'also'
/k g/	/laki/	<ลากี>	'husband'	/lagi/	<ลากิ>	'more'
/k ʔ/	/siyak/	<ซียัก>	'daylight'	/siyaʔ/	<ซียะ>	'prepare'
/c y/	/surac/	<ซูรัล>	'book'	/suray/	<ซูรัย>	'comb'
/ʔ -/	/ʔakeʔ/	<อาเก>	'lift'	/kaki/	<กาเก>	'foot'

2.3.2 Fricatives

Of the two voiceless fricatives, /h/ occurs both syllable-initially and finally, while /s/ has the allophone [s] syllable-initially and the allophone [ɰh] syllable-finally (section 2.2.6):

/s/	/sapa/	<ซาปา>	'who?'	/ʔatas/	<อาต>	'upon'
/h/	/hapa/	<ฮาปา>	'anything'	/patah/	<ปาต>	'break'

2.3.3 Nasals

The nasals /m n ŋ ɰ/ all occur syllable-initially, but only /m n ɰ/ occur syllable-finally:

/m/	/mati/	<มาตี>	'die'	/nam/	<นาม>	'six'
/n/	/nati/	<นาตี>	'time'	/janan/	<จางัน>	'don't'
/ŋ/	/ŋawa/	<งาวา>	'body'			
/ɰ/	/ɰaŋa/	<งาง>	'gaping open'	/sɰnaŋ/	<ซิ่ง>	'contented'

2.3.4 Laterals and semi-vowels

/w y/ occur both syllable-initially and finally (section 2.2.7). The characteristics of /l/ are discussed in section 2.2.4. /r/ varies from a retroflexed vocoid to a slight flap.

/w/	/ŋawa/	<งาวา>	'body'	/nimaw/	<นิมา>	'construct'
/y/	/kaya/	<กาย>	'rich'	/lamay/	<ลามาย>	'beckon'
/l/	/ialu/	<ลาจู>	'pass'	/lihel/	<ลิเอ>	'neck'
				/bumol/	<บูมอ>	'doctor'

/r/ /guru/ <ครู> 'teacher'
 /crimen/ <จระเข้น้ำ> 'glass'

2.4 DISTRIBUTION OF CONSONANTS

2.4.1 Syllable-initial single consonants

In main syllables all the consonants occur syllable-initially except /ph/. As further vocabulary is acquired probably main syllables commencing with /ph/ will be found.

In minor syllables all the consonants occur syllable-initially except /th ch kh/. A larger inventory may fill these gaps too.

In pre-syllables the only initial consonants so far recorded are /p t c k b d j m n s h l r/.

2.4.2 Syllable-final single consonants

Main syllables have been recorded ending with the stops /p t c k ?/, the fricatives /s h/, the nasals /m n ŋ/ and the lateral and semi-vowels /l w y/.

Only a few minor syllables have been recorded as ending with a consonant. The nasals /m n ŋ/ occur syllable-finally before a main syllable commencing with a stop at the same point of articulation. The stops /k ?/ occur syllable-finally before a main syllable commencing with a stop or /s/:

/nambɪ/ <นับสิบ> 'number'
 /naŋkri/ <บ้านกรี> 'country'
 /tokkha/ <ตึกท่า> 'name for town of Phuket'
 /baksa/ <บ้านชา> 'race, people'
 /waʔtu/ <เวลา> 'time'

No pre-syllables end with a consonant.

2.4.3 Consonant clusters

In terms of the description of Urak Lawoi' in this paper there are no true consonant clusters. Phonetic clusters of the form Cr, and other phonetic clusters sometimes occurring, are cases of pre-syllables (section 1.1.3).

3. VOWELS

3.1 VOWEL PHONEMES

Urak Lawoi' has eight vowel phonemes as set out in Figure 2. These vowels tend to be short in closed or unaccented open syllables, with

some of them having a distinct allophone in closed syllables (section 3.2).

	Front	Central	Back
	Unrounded		Rounded
High	i	ɨ	u
Mid	e		o
Low	ɛ	a	ɔ

Fig. 2. Urak Lawoi' vowel phonemes

3.2 VOWEL DESCRIPTIONS AND CONTRASTS

3.2.1 Front vowels

/i/ [i] a high close front unrounded vocoid, appearing in open syllables: /tali/ <တၢ်လီ> 'rope'.

[ɨ] a high open front unrounded vocoid, appearing in closed syllables: /bali/ [baliɨ] <ဘၢလီ> 'return'.

/e/ [ɛ] a mid close front unrounded vocoid, appearing in open syllables (only one example in the data): /ʔaye/ [ayɛ] <ၵၢၤယဲ> 'water'.

[e] a mid open front unrounded vocoid, appearing in closed syllables: /kuleʔ/ <ကူလဲ> 'skin'.

/ɛ/ [ɛ] a low close front unrounded vocoid: /cɛ/ <မူအ> 'grandfather'; /cicɛʔ/ <နီမူအ> 'torn'.

3.2.2 Central vowels

/ɨ/ [ɨ] a high close central unrounded vocoid, appearing in open syllables only: /gɨ/ <ဂီ> 'interrogative'.

/a/ [ʌ] a mid open back-central unrounded vocoid, appearing in closed syllables: /rawak/ [rawʌk] <ရၢၤသီက> 'space'.

[a] a low open back-central unrounded vocoid, appearing in open syllables: /raga/ <ရၢၤဂၢၤ> 'basket'.

3.2.3 Back vowels

/u/ [u] a high close back vocoid, slightly rounded: /pruc/ <ပုရု> 'scatter'; /lalɨ/ <လၢလီ> 'pass'.

/o/ [ɯ] a high open back vocoid, slightly rounded, appearing in closed syllables: /proc/ [pruc] <ပုရု> 'stomach'.

/o/ [o] a mid close back vocoid, slightly rounded, appearing in open syllables: /nori/ <โนรี> 'lorry'.

/ɔ/ [ɔ] a low close back vocoid, slightly rounded: /budo/ <บุดอ> 'stupid'; /roc/ <ร้อจ> 'reach'.

3.3 DISTRIBUTION OF VOWELS

3.3.1 Vowels in main syllables

All the vowels occur in open main syllables, but there is a heavy preponderance of /a i u/ and a limited occurrence of /e ɛ + o ɔ/: /mata/ <มาตา> 'eye', /mati/ <มาตี> 'die', /hatu/ <ฮาตู> 'a spirit', /ʔaye/ <อาเย> 'water', /ce/ <แฉ> 'grandfather', /g+ / <ถ่อ> 'interrogative', /budo/ <บุดอ> 'stupid'.

All the vowels except /ɨ/ occur in closed main syllables with the vowels /a i o/ predominating: /ʔurak/ <อูรัก> 'man', /ulik/ <อุลิก> 'turn over', /tulok/ <ตุลือก> 'help', /kuleʔ/ <กฺเละ> 'skin', /lageʔ/ <ลาเงะ> 'sky', /roc/ <ร้อจ> 'reach'.

3.3.2 Vowels in minor syllables

The majority of open minor syllables have the vowels /a i u +/: /mani/ <มานี> 'wash', /mita/ <มีตา> 'ask for', /rupa/ <รูปา> 'likeness', /krija/ <กรือฉา> 'work'.

Closed minor syllables have the vowels /a o/: /namb+ / <นัมบ้อ> 'number', /tokkha/ <ตกคา> 'name for town of Phuket'.

4. MORPHOPHONEMIC CHANGE

When the prefixes /mʔ-/ <มี> 'active prefix' or /pʔ-/ <ปี้> 'nominaliser' are prefixed to a verb, if the first consonant of the verb is a voiceless stop it changes to a nasal at the same point of articulation; if it is /s/ or /y/ it changes to /ñ/. The initial glottal stop /ʔ/ is not counted as a voiceless stop for this purpose.

/pukac/ <ปุกัก>	'a net'	/mʔmukac/ <มีมูกัก>	'fishes with net'
/tulok/ <ตุลือก>	'help'	/mʔnulok/ <มีนูลือก>	'helps'
/careʔ/ <จาเร>	'tell'	/mʔñareʔ/ <มีญ่าเร>	'tells'
/curi/ <กูรี>	'thieve'	/pʔñuri/ <ปี้ญูรี>	'a thief'
/kanok/ <กาโน๊ก>	'conceive'	/mʔganok/ <มีงาโน๊ก>	'conceives'
/sʔkat/ <ซี้กัต>	'lazy'	/mʔñʔkat/ <มีญูกัต>	'is lazy'
		/pʔñʔkat/ <ปี้ญูกัต>	'lazy person'

/yala/ <ยาลา> 'casting net'	/mʔǵala/ <มฺยาลา> 'casts a net'
/jadi/ <จาติ> 'become'	/mʔjadi/ <มฺยาลาติ> 'becomes'
/ʔupay/ <อุปัย> 'deceive'	/mʔʔupay/ <มฺยอุปัย> 'deceives'

In normal speech the prefix is optionally contracted by the omission of the /mʔ-/. When this is done the stem still retains the appropriate nasal: /mʔnulok/ becomes /nulok/ <นุโลก>.

When the verbal prefix /bɪ-/ <บิ> 'reflexive prefix' is prefixed to a verb commencing with a glottal stop, this changes to /r/: /ʔaleh/ <อาเลื่อ> 'turns' becomes /bɪraleh/ <บิอร่าเลื่อ> 'turn oneself'. In words of this type the /bɪ/ may become a pre-syllable: /braleh/ <บร่าเลื่อ>. In contrast when /bɪ-/ is prefixed to /ramay/ <รามัย> 'crowded, joyous', it never becomes a pre-syllable but is always written /bɪramay/ <บิอร่ามัย> 'crowded together'.

5. ORTHOGRAPHY

5.1 SYLLABLE-INITIAL CONSONANTS

A list of the Urak Lawoi' consonant phonemes with the Thai letters adopted for them is given in Figure 3, overleaf, with examples of each phoneme as they are found syllable-initially.

All of these Thai letters are used with their normal Thai value except <ฌ> for /j/, <ฃ> for /g/, <ฅ> for /ñ/. These three Thai letters which are used in this non-standard way are somewhat less common in Thai writing. It is considered that they can be borrowed in this way without causing confusion when their use is explained.

5.1.1 The letter <ฌ> /j/

Urak Lawoi' has the phoneme /j/ which does not occur in Thai (section 2.2.2). When Thai speakers attempt to represent this sound or a similar English /j/ in Thai script, they use the Thai letter ย = /y/; e.g. the English word 'John' is written ยจน = /jɔɔn/. However, because of the Urak Lawoi' contrast between /j y/, the Thai letter <ฌ> /ch/ has been borrowed to represent this Urak Lawoi' phoneme /j/.

5.1.2 The letter <ฃ> /g/

The voiced stop /g/, which does not occur in Thai, is a separate phoneme in Urak Lawoi' (section 2.3.1). The Thai letter <ฃ> /kh/ has been borrowed for this phoneme.

Phoneme	Orthography	Example		
ph	พ	/phrɨŋan/	<พริ่งน>	'a kind of fish'
th	ท	/thok/	<โทก>	'a bag'
ch	ช	/bɨʃchɨ/	<บิชี>	'to hate'
kh	ค	/khru/	<ครุ>	'teacher'
p	ป	/pi/	<ปี>	'go'
t	ต	/tiga/	<ติง>	'three'
c	จ	/ca/	<จา>	'older brother'
k	ก	/kita/	<กิด>	'we'
ʔ	อ	/ʔakeʔ/	<อาเกะ>	'to lift'
b	บ	/bini/	<บิ>	'wife'
d	ด	/diha/	<ดิ>	'where'
j	ฌ	/jadi/	<ฌา>	'become'
g	ง	/gati/	<งา>	'in place of'
s	ซ	/sunuh/	<ซุน>	'truly'
h	ฮ	/hitap/	<ฮิต>	'black'
m	ม	/mɨsiya/	<มิ>	'mankind'
n	น	/nam/	<นาม>	'six'
ñ	ญ	/ña/	<ญา>	'he'
ŋ	ง	/ŋaŋa/	<งา>	'gaping open'
l	ล	/lalu/	<ลาล>	'to pass'
w	ว	/waʔtu/	<วา>	'time'
r	ร	/rigaʔ/	<ริ>	'catch'
y	ย	/kayu/	<กาย>	'wood'

Fig. 3. Syllable-initial consonants

5.1.3 The letter <ญ> /ñ/

Urak Lawoi' has a nasal /ñ/ which does not occur as a Thai phoneme (section 2.2.3), but which is represented by the Thai letter <ญ> which had this pronunciation in an earlier form of Thai. In Thai this letter now represents /y/ syllable-initially and /n/ syllable-finally. It is used in the middle of some Thai words such as <วินยาน> /win-yaan/, where its first occurrence is syllable-final /n/ and its second is as syllable-initial /y/.

The only alternative to using the letter <ญ> would be to use the digraph <นย>. This is not a standard Thai combination and would tend to be read with a transition vowel between the /n/ and the /y/. Therefore the Thai <ญ> has been adopted for this Urak Lawoi' /ñ/. In Urak Lawoi' it always appears syllable-initially and singly so can easily be differentiated from its Thai use.

5.2 SYLLABLE-FINAL CONSONANTS

A list of the Urak Lawoi' consonant phonemes occurring syllable-finally is given in Figure 4, showing the Thai letters used for each phoneme and typical words.

Phoneme	Orthography	Example
p	บ	/kalap/ <กาสับ> 'pencil'
t	ต	/tuhət/ <ตุหัด> 'god, owner'
c	จ	/surac/ <สุระจ> 'book, writing'
k	ก	/barak/ <บารัก> 'goods'
i?	ิ	/dumi?/ <ดุมิ> 'little, small'
e?	เ-ะ	/cape?/ <คาเปะ> 'crippled'
ɛ?	แ-ะ	/laŋɛ?/ <ลาแงะ> 'sky'
a?	-ะ	/ka?/ <กะ> 'to'
u?	ุ	/lɨku?/ <ลิกุ> 'blister'
o?	โ-ะ	/liko?/ <ลิกะ> 'cover up'
ɔ?	เ-าะ	/likɔ?/ <ลิกาะ> 'bend, curve'
s	ซ	/ʔatas/ <อาตัส> 'upon'
h	ฮ	/bɨleh/ <บิเลฮ> 'can; get'
m	ม	/nam/ <นาม> 'six'
n	น	/jaŋan/ <จานัง> 'don't; with'
ŋ	ง	/sɨnaŋ/ <ซินาง> 'comfortable, easy'
l	อ	/ʔajal/ <อาจ้อ> 'teach'
aw	เ-า	/kaw/ <เกา> 'you'
ɛw	แ-ัว	/bɨtɛw/ <บิตัว> 'kind of shark'
ay	-ัย	/ramay/ <รามัย> 'fun'
ɔy	-อย	/hɔy/ <ฮอย> 'have not'

Fig. 4. Syllable-final consonants

5.2.1 Stops /p t k/

The symbols used for syllable-final stops /p t k/ are those used for initial /b d k/. In Thai these are the most common letters used syllable-finally to represent the unreleased stops /p t k/.

5.2.2 The stop /c/

This stop uses the same symbol whether occurring syllable-initially or finally. When this symbol occurs syllable-finally in Thai it is pronounced /t/, while in Urak Lawoi' it has the phonetic value of [-i?].

5.2.3 The glottal stop /ʔ/

Thai represents the final glottal stop in various forms in relation to the short form of the various vowels syllable-finally. This system is used for the various Urak Lawoi' vowels which occur with a final glottal, as shown above, but this has made it necessary to list the specific combination for each vowel.

5.2.4 The fricative /s/

In Thai the sound /s/ never occurs syllable-finally and any words written with a final symbol otherwise used for /s/ are pronounced as ending with /t/. In Urak Lawoi' the phoneme /s/ occurs syllable-finally in the allophone [ih]. This is represented by the Thai letter /s/ <๕>, which will need special instruction so that it is not pronounced /t/.

5.2.5 The fricative /h/

/h/ occurs syllable-finally in Urak Lawoi' but never does so in Thai. The Thai symbol /h/ <๕> can be used here without any confusion.

5.2.6 Nasals /m n ŋ/

These cause no problem as they occur syllable-finally in both Thai and Urak Lawoi'. Thai has two alternatives for syllables ending in /am/ which may be written either <๕๓> or <๕๓>. In Urak Lawoi' the first of these has been adopted as requiring one less symbol to be learned.

5.2.7 The lateral /l/

This final consonant could be written with the Thai consonant /l/ <๕>, but this is read as /n/ when occurring syllable-finally, and unlike some of the changes from Thai practice above, experience has shown that this would create resistance which would be difficult to overcome. Urak Lawoi' final /l/ is phonetically close to the Urak Lawoi' vowel /ɹ/, which is written with the digraph <๕๓> in Thai syllable-finally. The second part of this digraph <๕๓> has been adopted as the symbol for final /l/ and has proved quite satisfactory when taught. In Thai it never occurs syllable-finally preceded by a short vowel, so its use in this way in Urak Lawoi' is quite distinct and easy to recognise.

5.2.8 Semi-vowels /w y/

For these the symbols used are those normally used in Thai for a short vowel followed by /w y/. As these symbols are not entirely

consistent a specimen is given in Fig. 4 of each combination which has been recorded.

5.3 VOWELS

Not only are there fewer vowel phonemes in Urak Lawoi' from what occur in standard Thai, but some of these have rather different qualities. It is likely that these differences are more in the direction of Pak Tai (Southern Thai), but no systematic comparison has been made. Especially problematic are /e/ and /o/ which are often higher than corresponding Thai sounds, and phonetically closer to the phonemes /i u/ than is the case with the Thai phonemes.

The writing of the vowels of course has to conform in important measure to the reaction of Urak Lawoi' speakers to Thai orthography, as mediated through their knowledge of Pak Tai, and therefore is not as straightforward a correspondence to Urak Lawoi' phonemes as would otherwise be desirable.

The eight Urak Lawoi' vowels /i e ε + a u o ɔ/ all occur in open main syllables with a sound analogous to that of the corresponding Thai long vowel, but a little shorter, and in some cases higher. All these vowels except /+ / also occur in closed syllables, where their sound tends more in the direction of the short Thai vowels. In minor syllables also, the Urak Lawoi' vowel tends in the direction of the short Thai vowel, but not as much as in closed syllables.

Length is not phonemic in Urak Lawoi' so that the form of the Thai long vowel could be used in every case, except where it is necessary to use the Thai short vowel syllable-finally to indicate a final glottal. In view of the need to use the form which will assist the Urak Lawoi' people to progress to reading Thai, it is considered that the short Thai vowels should be used in Urak Lawoi' closed syllables.

The representation of the transition occurring in pre-syllables is treated in section 5.3.3.

5.3.1 Vowels in open syllables

In Figure 5 (overleaf) the Urak Lawoi' vowels are listed as they appear in open syllables.

Phoneme	Orthography	Example
i	๕	/ʔini/ <๕๓> 'this'
e	๕-	/ʔaye/ <๕๓๕> 'water'
ε	๕-	/cε/ <๕๓> 'grandfather'
ɨ	๕๓	/gɨ/ <๕๓> 'interrogative'
a	-๓	/raga/ <๓๓> 'basket'
u	๕	/tuŋu/ <๕๓> 'wait, watch'
o	๕-	/nori/ <๕๓> 'lorry'
ɔ	-๓	/bɔya/ <๓๓> 'boat's stempiece'

Fig. 5. Urak Lawoi' vowels in open syllables

5.3.2 Vowels in closed syllables

In Figure 6 the Urak Lawoi' vowels are shown as they appear in closed syllables. There are separate columns to distinguish closed syllables ending with a glottal from those ending with other consonants, as there are differences in the Thai symbols for syllables ending with a glottal (section 5.2.3).

Phoneme	Orthography	Normal syllables	Syllables ending with a glottal	Meaning
i	๕	/ʔasik/ <๕๓>		'other'
	๕		/bajiʔ/ <๓๓>	'good'
e	๕๓	/ʔaŋen/ <๕๓๓>		'wind'
	๕-๓		/capeʔ/ <๕๓๓>	'crippled'
ε	๕๓	/bɨtɛw/ <๕๓๓>		'type of shark'
	๕-๓		/laŋeʔ/ <๕๓๓>	'sky'
a	๕	/hitap/ <๕๓>		'black'
	-๓		/kaʔ/ <๓>	'to'
u	๕	/ratus/ <๓๓>		'hundred'
	๕		/lɨkuʔ/ <๕๓>	'blister'
o	--	(before /p t k m n ŋ/)		
	๕	/hɨlot/ <๕๓>		'front'
	๕	(before /c s h l w y/)		
	๕	/proc/ <๕๓>		'stomach'
	๕-๓		/likoʔ/ <๕๓>	'cover up'
ɔ	๕๓	/bumɔl/ <๕๓>		'doctor'
	๕-๓		/likoʔ/ <๕๓>	'bend, curve'

Fig. 6. Urak Lawoi' vowels in closed syllables

The environmental restrictions of Fig. 6 are due to normal Thai conventions. In accordance with Thai practice the vowel shortening 'maytaykhuu' <๕> is used with <๑- ๙- ๑- -๑> to show the vowels /e ɛ o ɔ/ in closed syllables.

5.3.3 Writing of pre-syllables

The "vowel" of a pre-syllable is non-contrastive, marking open transition (section 1.1.3). In the Thai writing system for Urak Lawoi' it has been symbolised for convenience in a rough approximation of its pronunciation in different environments as described earlier:

Pronunciation	Orthography		
zero	-	/prahu/	<ปราชู> 'boat'
/ǔ/	๑	/hǔwac/	<ฮูวัก> 'fever'
/ʔ/	๑	/ʔʔya/	<ฮียา> 'little girl'
/ʔ/	๑	/sʔnaŋ/	<ฮีนัง> 'comfortable, easy'

5.4 TONE MARKS

As Urak Lawoi' is not tonal and the intonation of the sentence can be predicted to some extent from the context there is no necessity to use tone marks. It might prove necessary to use them for loan words from Thai, but as a general rule they would only be needed as the Urak Lawoi' student progressed to reading Thai.

5.5 PUNCTUATION MARKS

It is considered that the Thai method of writing without any space between words should not be followed, as difficulties would be caused by the different patterns of the Urak Lawoi' syllables and the unusual final consonants. Spaces between words as in English will assist in identifying the word-boundaries. A longer space between words can then signal the end of a phrase or clause, while the end of a sentence can be marked with a full stop.

6. SAMPLE TEXT

The following text is a transcription of a description of a cray-fishing expedition.

prahu ko?	hurin kuña pi ka?	hurak.	kuña pi ñalap hurak
ปราชู โกะ	ฮูริน กุณา ปี กะ	ฮูรัก.	กุณา ปี ญาลับ ฮูรัก
boat group	Hurin they go to (get)	crayfish.	they go dive crayfish

hu pe? bri bri kīyu. kuña pi mñālap jaŋan ?ijen ?aŋen.
 ฮู เปะ บรี บรี คียู. กูณา ปี่ มีญาลับ ฉางัน ชีเฌ็น อาเจ็น.
afar place Pi Pi over there. they go diving with engine air.

l̥hu kuña mñālap bñleh lamalama, kuña bñleh hurak baña?
 ลีฮู กูณา มีญาลับ บีเล็ล ลามาลามา กูณา บีเล็ล ฮูรัก บาญา.
particle they diving can a-long-time, they get crayfish many.

sñ?kali bali? t̥, r̥c ka? duwa ratus l̥beh hurak.
 ซีกาลี บาลิ ต็อ ร็อจ กะ ดูวา ราตุซ ลีเบ็ล ฮูรัก.
once back particle, as-much-as two hundred over crayfish.

meh juwan ka? tokkha. jadi r̥ga (r̥c) r̥c ka? sñribu l̥beh
 เม็ลฮ ญวน กะ ตกคา. ฉาดิ ร็งา (ร็อจ) ร็อจ กะ ซึริบู ลีเบ็ล
come sell to Phuket. get price as-much-as one-thousand over

duwe?. ?ini kuña bali? pulak ka? t̥ nama. kuña bñleh baña?
 ดูเวะ. ชินิ กูณา บาลิ ปุลัก กะ ต็อ นามา. กูณา บีเล็ล บาญา
money. this they back again then-what? they get much

pulak da? t̥.

ปุลัก ดะ ต็อ.

again particles.

FREE TRANSLATION

The boat of Hurin and his friends has been to get crayfish. They have been diving for crayfish as far as Pi Pi Island. They went diving with an air-compressor. They dived for a long time and got many crayfish. Once they returned with as many as over two hundred crayfish. They took them and sold them in Phuket. They got a price of over one thousand baht [fifty U.S. dollars]. When they brought this back, what then? They were able to get many again.

NOTE ON RECENT CHANGES

Since this paper was written, further experience has led to a few modifications in the above orthography. These are described in an unpublished paper, "Urak Lawoi' Orthography Problem".

APPENDIXES

by

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APPENDIX ONE

COMPARISON OF ORTHOGRAPHIES

In the following charts are listed the Thai consonant and vowel symbols with symbols for the corresponding phonemes or combinations of phonemes in the ten languages which have been described in this volume. This comparison is in some respects oversimplified. 1) We make no attempt to compare the writing of tones as they have been described in the different chapters. 2) The phonetic values of the various phonemic symbols vary from language to language in some cases. The use of the same symbol for two different languages does not mean that the pronunciation is identical. On the other hand, sometimes different symbols are used for substantially the same sound both in the phonemic writing and in the Thai symbols selected. Thus Phlong /ny/ <uu> is very similar to /ñ/ <ny> of several other languages. For accurate details consult the respective chapters in each case.

Furthermore, this listing is not analytical in any way. The order is that of the Thai alphabet, with modified symbols fitted in after the symbols they most nearly resemble. No distinction of consonant class is made, nor are other complications in the Thai writing system accounted for. Such factors are described in the respective articles. Here we are simply comparing roughly how the Thai symbols are used in the different languages.

In a few cases the information is not complete. This is particularly true in Table 4, as some of the papers do not list all of the consonant clusters which occur. Furthermore, in some extreme cases the information has not been listed because of the disparity between the Thai system and the way it is used in a particular language. Thus, for example, in Lavüa' preglottalised consonants /ʔm ʔb/, etc., are not listed under the

consonant clusters because they are represented in Lavüa' with a combination of what is in Thai a consonant symbol with a tone symbol.

However, for anyone studying the use of Thai script for writing a number of languages with varying phonemic structures, the tables are useful in laying out the problems in a comparative way. For more than a general overview, the various chapters will have to be consulted.

Thai phonemic values are given for comparison. Where there is a blank in any column it means that the particular Thai-based symbol form does not occur in that language (or that information about it was not complete in the chapter). The same phoneme is often represented by more than one Thai symbol. Most frequently this is due to the requirements of the writing of tone, as described in Appendix 2 and in the various chapters. Sometimes it is because Thai has more than one symbol for the same value. Sometimes it is because the phoneme is pronounced in more than one way in the particular language being written, and the writing system reflects the way it is pronounced in different positions for reasons of transfer value to Thai.

Symbol	Thai	No. Khmer	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
ก	k	k	k	k	k	k	k	k	k	k	k	
ข	kh		kh	kh	k	kh	kh		k			HCC pairs with ค
ค	kh	kh	kh	kh	k	kh	kh	kh	kh	kh	kh	LCC pairs with ข
ฆ	kh		qh	x	g	x	g			g	g	
ง	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	
จ	c	c	c	ty	c	c	c	c	c	c	c	
ฉ	ch		ch	thy	c	ch	ch		c			HCC pairs with ช
ช	ch	ch	ch	thy	c	ch	ch		ch	ch	ch	LCC pairs with ฉ
ส	s	s	s	s	s	s	s	s	s	s	s	
ฌ	ch			j	j	g	j			j	j	
ญ	y	ñ	ñ	z	ñ		ñ	ñ	ñ	ñ	ñ	
ฎ	d			g	g				j			
ฏ	t											
ฐ	th											HCC pairs with ท
ฑ	th						dz					LCC pairs with ฏ
ฒ	th						ts					
ณ	n											
ด	d	d	?d	d	d	d	d	d	d	d	d	
ต	t	t	t	t	t	t	t	t	t	t	t	
ถ	th		th	th	t	th	th		t			
ท	th	th	th	th	t	th	th	th	th	th	th	
ธ	th						tsh					
น	n	n	n	n	n	n	n	n	n	n	n	
บ	b	b		b	b	b	b	b	b	b	b	
ป	p	p	p	p	p	p	p	p	p	p	p	

Table 1 - continued overleaf

Symbol	Thai	No. Khmer	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
ผ	ph		ph	ph	p	ph	ph		p			HCC pairs with w
ฝ	f		f	f		f	f					
พ	ph	ph	ph	ph	p	ph	ph	ph	ph	ph	ph	LCC pairs with w
ฟ	f		f	f		f	f		f	f		
ภ	ph											
ม	m	m	m	m	m	m	m	m	m	m	m	
ย	y	y	y	zy	y	y	y	y	y	y	y	
ร	r	r	ž			r		ĩ	r	r	r	
ฤ	ry			g								
ล	l	l	l	l	l	l	l	l	l	l	l	
ฬ	ly											
ว	w	w	v	v		w	w	w	w	w	w	
ศ	s											
ษ	s											
ส	s		s	s	s	s	s					
ห	h		h	h	x	h	h	h				
ฬ	l											
อ	?	?	?	?	?	?	?	?	?	?	?	
ฮ	h	h	h	h	x	h	h		h	h	h	

Table 1. Syllable-initial single consonant symbols

Symbol	Thai	No. Khmer	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
ก	k	k/?					g	k	k	k	k	
ง	ŋ	ŋ	~	ŋ	~	~	ŋ	ŋ	ŋ	ŋ	ŋ	~ = nasalisation
ค	t	c						c	c	c	c	
ซ											s	
ญ	n	ñ						ñ	ñ	ñ		
ด										t		
ต	t	t					d	t	t		t	
น	n	n		~	~		n	n	n	n	n	~ = nasalisation
ป	p									p		
บ	p	p					b	p	p		p	
ม	m	m					m	m	m	m	m	For /am/ see vowels
ย	y	y					y	y	y		y	For /ay eey ia/ see vowels
ร	n	r						ĩ				
ล	n	l						l	l			
ว	w	w					w	w	w		w	For /aw/ see vowels
ห								h				
อ											l	
ฮ		h							h	h	h	

Table 2. Syllable-final single consonant symbols. For /-?/ see listings with the various vowels in Table 3.

Symbol	Thai	No. Khmer	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
--	o	o					o	o		o	o	
-๑-	ua	ua					wo	ua	ua			
๑๑-		wa										
-๑๒-										uε		See also final <u>
-๑๓	๑(๑)	๑๑	๑	๑	๑	๑	๑	๑๑	๑๑	๑๑	๑	
๑๑		๑									๑	
-๑๒				๑y						๑i	๑i	See also final <u>
-๑๒๒										๑i?		
-๑๑									๑๑			
-๑๑๑									๑๑?			
-๑๑										iu		See also final <๑>
๑๑		๑๑										
๑๑		๑										
-๑	a(?)	a(?)		๑	a	๑/a?	๑?	a?	a?	a?	a?	
-๑	a	a					๑	a	a		a	
-๑๑-									๑			
๑๑	ua	ua	ua				u๑	ua	ua	ua		
๑๑๒		wa?							ua?	ua?		
-๑	aa	aa	a	a	๑	a	a	aa	aa	aa	a	
-๑๑	aaw			aw						ao		See also final <๑>
-๑๒							a?					
-๑๑๑									aa?			
-๑										a+		
-๑										a+		
-๑	am	am			am							

Table 3 - continued

Symbol	Thai	No. Khmer	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
ᵃ	i(?)	i(?)		ᵃ	ᵃ		i(?)	i(?)	i(?)	i?	i(?)	See also final <ɿ>
ᵃᵃ					ᵃᵃ							
ᵃᵃᵃ		i(?)										
ᵃᵃᵃᵃ	ii	ii	i	i	ᵃ	i	i	ii	ii	ii	i	
ᵃᵃᵃᵃᵃ		ii										
ᵃᵃᵃᵃᵃᵃ	ɿ(?)	ɿ(?)		ᵃ	ᵃ			ɿ(?)	ɿ(?)	ɿ?	ɿ	
ᵃᵃᵃᵃᵃᵃᵃ	ɿɿ	əə	ü	ɿ				ɿɿ	ɿɿ	ɿɿ		
ᵃᵃᵃᵃᵃᵃᵃᵃ	ɿɿ				ᵃ	ɿ		ɿɿ	ɿɿ		ɿ	
ᵃᵃᵃᵃᵃᵃᵃᵃᵃ		əə										
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ	u(?)	u(?)		ᵃ	u		u(?)	u(?)	u(?)	u?	u(?)	See also final <u>
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ										ui		
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ	uu	uu	u	u	ᵃ	u	u	uu	uu	uu	u	
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ		u(?)										
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ		uu										
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ	ee	ee	e	e	è	e	e	ee	ee	ee	e	
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ	e	e						e			e	
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ	əəy	ɿɿy					ey	əy	əəy			
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ									ʌy			
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ					ö		ew			eo		
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ					ö					eo?		
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ			aü									
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ	əə	ɿɿ		ə	è	ə		əə	əə	ə		
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ									ʌ			
ᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃᵃ	ə?	ɿ?		ə	ë	ə?		ə?	ʌ?	ə?		

Table 3 - continued overleaf

Symbol	Thai	No. Khmer	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
ɿ-ɿ										əɿ?		
ɿ-ɿ̃										əɿ		
ɿ-ɛ	e?	e?		ɛ	e	e?	e?	e?		e?	e?	
ɿ-ɛ̃						aɿ?						
ɿ-ɯ	aw	aw			aw	au	əw		aw		aw	
ɿ-ɯ̃						au?						
ɿ-ɯ̃	ɔ?	ɔ?		ɔ	ɔ	ɔ?	ɔ?	ɔ?	ɔ?	ɔ?	ɔ?	
ɿ-ɯ̃		ɑ?										
ɿ-ə	ə(ə)	γγ				ə		ə(ə)	əə	ei?		
ɿ-ə̃		γ										
ɿ-ə̃								ie				
ɿ-ə̃										ei		
ɿ-ə̃	ia	ia	ia				ia/ie/ ie	ia	ia	ia		
ɿ-ə̃		ya										
ɿ-ə̃	ia?	ia?							ia?	ia?		
ɿ-ə̃		ya?										
ɿ-ə̃	ɬa	ɬɬ						ɬa		ɬa		
ɿ-ə̃										ɬa?		
ɿ-ə̃	ɛɛ	ɛɛ		æ	æ	ɛ	ɛ	ɛɛ	ɛɛ	ɛɛ	ɛ	
ɿ-ə̃	ɛ	ɛ						ɛ	ɛ		ɛ	
ɿ-ə̃		ʌʌγ							ʌʌγ			
ɿ-ə̃											ɛw	
ɿ-ə̃				æw						ɛo		
ɿ-ə̃										ɛo?		

Table 3 - continued

Symbol	Thai	No. Khmer	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
u-ə									ʌʌ			
u-əʷ		ʌʔ										
u-ɛ	ɛʔ	ɛʔ		əʔ	ə	ɛʔ	ɛʔ	ɛʔ	ɛʔ	ɛʔ	ɛʔ	
u-ɛʷ									ɑʔ			
u-ɪ		ʌʌ							ʌʌ			
u-ɪʷ		ʌ										
ɪ-	oo	oo			ò	o	o	oo	oo	oo	o	
ɪʷ											o	
ɪ-u										oi		
ɪ-ɔ			au				ow			əo		
ɪ-ɛ	oʔ	oʔ			o	oʔ	oʔ	oʔ	oʔ	oʔ	oʔ	
ɪ-	ay											
ɪ-	ay	ay	ai		ay	ai	əy	ay		ai		
ɪ-ɛ						aiʔ						
ɪ-									ṽ			v = vowel; ` = low register

Table 3. Vowels, vowel clusters, and some combinations with /-ʔ -y -w -m/ according to the requirements of the Thai writing system

Symbol	Thai	No. Khmer*	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
nn			q									
ny						ky		ky				
nr	kr	kr				kr			kr		kr	
nl	kl					kl		kl	kl	kl		
nv	kw			kw		kw		kw		kw		
ny	kha.y					khy						
nr	chr					chr			kr			
nl	khl					khl			kl			
nv	khw			khw		khw						
ny	kha.y					khy		khy				
nr	chr					chr				chr	chr	
nl	khl	khl				khl		khl	khl	khl		
nv	khw			khw		khw		khw		khw		
nr	kha.r									gr	gr	
nl										gl		
nv				xw		xw						
nk			nk					nk	nk			
ny	nok.y							nyk				
nl	nok.l							nyk				
ni			nq									
ny			nkh									
ni			nkh					nykh	nykh			
ni			nqh									
nv				nv		nv	nv		nv			
ni									nh			

Table 4 - continued

Symbol	Thai	No. Khmer*	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
จจ			tš									
จร	ca.r										cr	
จว				tyw		cw		cw				
จว	cha.w			thyw		chw						
จว	cha.w	chw		thyw		chw						
ชช			x	sy		sy						
ชร		sr	š								sr	
ชว				sw		sw		sw				
ฉร											jr	
ญจ								ñc	ñc			
ญจ									ñj			
ญช									ñch			
ญว				zw								
ญห								ñh				
ฎว				gw								
ดร											dr	
ดว				dw		dw						
ดช			ts	ɕ								
ดร	tr	tr	r			tr			tr		tr	
ดว	ta.w			tw		tw		tw				
ดล			ts	ɕ								
ถจ			tšh									
ถด			?th									
ถร			rh									
ถว	tha.w			thw		thw	thw					

Table 4 - continued overleaf

Symbol	Thai	No. Khmer*	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
ถล			tsh	ɬh								
ทช			tʂh									
ทช			tsh	ɬh								
ทด			?th									
ทร	s/thoo.r		rh									
ทว	tha.w			thw		thw	thw	thw				
รว							tshw					
นจ			nc									
นจ			ntʂ									
นค			nch									
นช			nch									
นช			nts					ns	ns			
นด			nt						nd			
นด								nt	nt			
นตร									ntr			
นถ			nth									
นถด			ntʂh									
นถล			ntsh									
นถร			nrh									
นท	na.th		nth					nth	nth			
นทช			ntʂh									
นทช			ntsh									
นทร			nrh									
นน	na.n								nn			
นย	na.y			ny		ny						

Table 4 - continued

Symbol	Thai	No. Khmer*	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
นยว	na.ya			nyw								
นร	na.r											
นล	na.l								nl			
นว	na.w			nw		nw						
นล			nts									
นห	na.h							nh				
บย				by	by	by						
บยว				byw								
บร	bo.r								br	br	br	
บล									bl	bl		
บว				bw			bw					
ปย					py	py		py				
ปร	pr	pr				pr			pr		pr	
ปล	pl		pl			pl		pl	pl	pl		
ปว	pa.w					pw	pw					
ผย	pha.y			phy	py	phy						
ผยว				phyw								
ผร	phr					phr			pr			
ผล	phl		phl			phl			pl			
ผว				phw		phw						
ผว				fw								
พย	pha.y			phy	py	phy		phy				
พยว				phyw								
พร	phr					phr			phr	phr	phr	
พล	phl	phl	phl			phl		phl	phl	phl		

Table 4 - continued overleaf

Symbol	Thai	No. Khmer*	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
พว				phw		phw		phw				
ฟว				fw								
มบ			np						mb			
มบล			nbl						mbI			
มป								mp	mp			
มปย								mpy				
มปร									mpr			
มปล								mpl	mpl			
มผ			nph						mp			
มผร									mpr			
มผล			nplh						mpl			
มพ			nph					mph	mph			
มพร									mphr			
มพล			nplh						mphi			
มย	ma.y			my	my	my						
มยว				myw								
มร	moo.r					mr			mr		mr	
มล	ma.l					ml			ml			
มว				mw		mw						
มท	ma.h							mh				
ลย				ly		ly						
ลว				lw		lw						
ลท	la.h							lh				
วว				vw								
ลย	sa.y			sy		sy						

Table 4 - continued.

Symbol	Thai	No. Khmer*	Hmong Daw	Lisu	Akha	Phlong	Mien	Mal	Kuy	Lavüa'	Urak Lawoi'	NOTES
สยว				syw								
สร	s/sa.r		š									
สว	sa.w			sw		sw						
ท-	+		+	+	+	+	+					Prefixed to low class consonants to change tone rules to high class rules. Examples of this use not listed.
หย				hy		hy		hy				
หว				hw		hw		hw				
หญ			hñ									
हन			hn									
หม			hm									
หมล			hml									
หล			hl									
ฮง							ɣh			hɣ		
ฮญ			hñ				ñh		hñ			
ฮน			hn				nh		hn	hn		
ฮม			hm				mh		hm	hm		
ฮมว							mhw					
ฮมล			hml						hml			
ฮย				hy		hy	yh		hy	hy		
ฮร										hr		
ฮล			hl				lh		hl	hl		
ฮว				hw		hw	wh					

Table 4. Syllable-initial sequences of consonant symbols. These are phonemic clusters or single phonemes written with digraphs. As used in the ten minority languages, none of them has an intervening vowel, although the Thai usage in some cases does have a vowel. Data are not complete for the languages starred *. In the listing of Thai values, . = syllable boundary.

APPENDIX TWO

OUTLINE OF THE THAI WRITING SYSTEM

I would like to attempt here a brief outline of the major features of the Thai writing system, an understanding of which is necessary to follow some of the discussion in the various chapters of this volume. This presentation is not complete, nor would it enable anyone to learn to read Thai. It simply describes the system, including the major structural factors which make the system complicated for the reader and for writing other languages in Thai script. For other information, see Haas 1956, Anthony 1962, Brown 1969:211-13.

The first half of this presentation consists of some of the major conventions and rules which give trouble to the user of the Thai writing system, and which differentiate it from the Roman (Western letter) type. This is followed by a series of charts which give inventories of the phonemes of the spoken language, the symbols of the written language, and the values of the combinations which occur in the written language.

To reduce the number of complications we first restrict ourselves to the symbolisation of those spoken syllables which consist of one consonant followed by a phonemically long vowel accompanied by tone, and no final consonant (CVV^t). If we indicate the position of the consonant by -, as is frequently done in the papers of this volume, then we find the vowel symbol (V) in the following positions:

-V V- $\overset{V}{-}$ $\underset{V}{-}$ V-V

That is, certain vowel symbols always appear after the consonant, others always before it, above it, below it, or bracketing it. In the latter case, the vowel symbol is a digraph, made up of two symbols which would have different values used by themselves.

Here follow examples of vowels in each of these positions around the arbitrarily chosen consonant symbol <ก>:¹

ก	เก	กี	กู	เกอ
kaa	kee	kii	kuu	kəə

If we add the vowel combinations /ia ua/ to the above inventory, we get two additional combinations:

V	V
V-V	-V
เกีย	กัว
kia	kua

A consonant² is written after any of the combinations so far described except <ก> and <เ-อ>:

-V-	V--	V-	V-	V-V-	V-V-	-V-
กก	เกก	กก	ก	เกก	เกียก	ก
kaak	keek	kiik	kuuk	kəək	kiak	kuak

However, in the case of <ก> the symbolisation of the vowel is reduced from what it is without final consonant to <ก>, and in the case of <เ-อ> it produces a new position with <เ-อ>, as illustrated.

If the spoken syllable begins with a true consonant cluster instead of a single consonant, the vowel symbols are in their positions around the cluster with the second consonant of the cluster taking the vowel symbol if it is above or below. The final consonant of the syllable is in parentheses in the following examples when the form with and without final consonant is the same.

--V(-)	V--(-)	V-(-)	-V(-)	V--V	V-V(-)	-V
กล(ก)	เกล(ก)	กลี(ก)	กลู(ก)	เกลอ	เกลีย(ก)	ก
klaa(k)	klēe(k)	klīi(k)	kluu(k)	kləə	klia(k)	klua

There is an inherent ambiguity in the writing system with the combination V--V. Thai writing does not mark word or syllable boundaries, which leads to the possible interpretation of V--V as well as V--V (letting . represent the boundary of a spoken syllable). Thus, เกลอ could be /kləə/ or /kee.ləə/.

An additional difficulty comes from the fact that not everything written as an initial sequence of consonants in Thai is a true cluster.

¹I am not giving "examples" in the sense of words which have meaning, but am illustrating the way in which the writing system operates by introducing as few variables as possible. Many of the combinations do not actually have meaning, but some other consonant in the place of <ก> would give a meaningful combination.

²Not all cases of final /w y m/ follow this rule, as will be shown below.

Some sequences of consonant symbols in this position represent a pronunciation with /a/, or more rarely some other vowels, between the consonants.

Writing of tone for "live" syllables with long vowels or vowel combinations

By "live" syllables we refer to spoken syllables which do not end in /p t k ʔ/. That is, they may end in a vowel or in /m n ŋ w y/ (Chart 1). Tone rules differ in detail when the vowel is short or the syllable is "dead" (ending in /p t k ʔ/).

Thai consonant symbols are divided into three classes according to the tone rules they follow. These classes are arbitrarily called "mid class consonant" (MCC), "high class consonant" (HCC), and "low class consonant" (LCC). The five official written tones of Standard Thai are written as follows in live syllables beginning with MCC. Note that the difference in tone is indicated by a difference in diacritic mark above the consonant:

MCC	กา	ก่า	ก้า	ก๊า	ก๋า
	kaa	kàa	kâa	káa	kǎa
	(mid)	(low)	(falling)	(high)	(rising)
	กาม	ก้าม	ก้าม	ก้าม	ก้าม
	kaam	kàam	kâam	káam	kǎam

Note that the tone symbol comes in a second orbit, outside the vowel symbol position, in the same orbit with the final consonant, but in a different position:

เกียม	เกียม	เกียม	เกียม	เกียม
kiam	kiam	kiam	kiam	kiam

Now let's look at high class consonants. Where there is an asterisk the combination does not occur:

HCC	*	ข่า(ม)	ข้า(ม)	*	ข๋า(ม)
		khàa(m) ¹	khâa(m)		khǎa(m)

Two important differences emerge between HCC and MCC. You cannot write mid tone or high tone with a high class consonant, and the inherent tone (the one which is represented when there is no diacritic) is rising rather than mid.

Before we discuss the problem of the combinations which cannot be written with HCC, let's compare low class consonants:

¹Symbols for aspirated stops /ph th ch kh/ count as single consonants in the Thai writing system.

LCC	คํ(ม)	*	คํ(ม)	คํ(ม)	*
	khaa(m)		khâa(m)	kháa(m)	

The inherent tone of LCC is mid (like MCC), but the tones which the diacritics represent have shifted from both MCC and HCC. You cannot write low or rising tone with LCC.

If you combine the HCC and LCC examples, you get:

HCC	*	ขํ(ม)	ขํ(ม)	*	ขํ(ม)
LCC	คํ(ม)	*	คํ(ม)	คํ(ม)	*
	khaa(m)	khàa(m)	khâa(m)	kháa(m)	khǎa(m)

which means that whereas neither HCC nor LCC could be used to write all the tones, between them it has become possible. There are two different ways in which falling tone can be written.

For every basic HCC there is a corresponding LCC with the same consonantal pronunciation, and the converse is true also, but in a more complicated way. Some LCC symbols are changed to HCC rules by writing them as part of a digraph with preceding <๒> (or in a few cases <๑>).

HCC	*	หมํ(ม)	หมํ(ม)	*	หมํ(ม)
LCC	มํ(ม)	*	มํ(ม)	มํ(ม)	*
	maa(m)	màa(m)	mâa(m)	máa(m)	mǎa(m)

MCC are not paired with consonant symbols in any other class. Symbols for /p t c k ʔ b d/ are MCC. Symbols for all other consonants are HCC/LCC.

Writing of tone for "dead" syllables with long vowels or vowel combinations

"Dead" syllables end in /p t k ʔ/ (but there are no final /ʔ/ after long vowels, only after short ones). The rules for spelling tone on dead syllables are sometimes different from those used for live syllables. Furthermore, not all tones occur on dead syllables. In the following examples the live syllables are repeated for comparison. Note that the differences in the tone rules occur on combinations which do not have a diacritic.

MCC (live syllables)

กํ(ม)	กํ(ม)	กํ(ม)	กํ(ม)	กํ(ม)
kaa(m)	kàa(m)	kâa(m)	káa(m)	kǎa(m)

(dead syllables)

*	กาด	กาด	กาด	*
*	kàat	kâat	káat	*

HCC/LCC (live syllables)

คฺา(ม)	ขฺา(ม)	ชฺา(ม)/คฺา(ม)	คฺ้า(ม)	ชา(ม)
khaa(m)	khàa(m)	khâa(m)	kháa(m)	khǎa(m)
มา(ม)	หฺมา(ม)	หมฺา(ม)/มฺา(ม)	มฺ้า(ม)	หมา(ม)
maa(m)	màa(m)	mâa(m)	máa(m)	mǎa(m)

(dead syllables)

*	ชาต	คฺาต	คฺ้าต	*
*	khàat	khâat	kháat	*
*	หมาต	มฺาต	มฺ้าต	*
*	màat	mâat	máat	*

One example of the complications represented above is the fact that a written symbol without a tone diacritic (i.e. without <' ~ ~ ~> is to be read as mid tone if the syllable is live and the consonant is MCC or LCC, rising tone if the syllable is live and the consonant is HCC, low tone if the syllable is dead and the consonant is HCC, falling tone if the syllable is dead and the consonant is LCC. These rules, remember, only apply to vowels of the type already discussed. Short vowels add the situation where the tone is high on a dead syllable and LCC. So in one combination or another, each of the five tones may be represented by the absence of a tone diacritic.

Short vowels

The writing of short vowels adds no new positions to those listed for various long vowels. Not all of the positions occupied by long vowel and cluster symbols are occupied by short vowels as well, however.

The short vowels introduce some additional complications. /o/ has no symbol except before /?/. Thus /kok/ is spelled <กค>. <อ> is used for long and short /อ อ/ with no distinction. Even when there are long and short forms of symbols <เ-เ< /ee e/ <แ-แ< /εε ε/, frequently no distinction is made in writing, particularly if there is a tone diacritic. Some symbols represent more than just the short vowel, but include a final consonant as well, particularly /? w y m/. Thus <ล ใ> represent /ay/, <เ-ใ> /aw/, <-ใ> /am/, <-ะ> /a?/. However, in unstressed position <ะ> may represent not /a?/ but simply /a/, and when it occurs with another vowel symbol it represents shortening of that vowel, with or without /?/.

The writing of tone follows the same type of structure as for long vowels, but the rules are again sometimes different.

Thai comparison charts

Rather than go into more detail on the Thai writing system in this discursive way, we present the major elements in the following series of charts which may be used for systematic comparison with the phonology and orthography systems presented in the various chapters of this book. Charts 1-3 present Thai phoneme inventories, and the remaining charts indicate different aspects of representing these phonemes in writing.

Initial consonants

	Labial	Dental	Palatal	Velar	Glottal
Stops					
<i>Voiceless</i>					
Unaspirated	p	t	c	k	ʔ
Aspirated	ph	th	ch	kh	
<i>Voiced</i>					
	b	d			
Continuants					
Nasal	m	n		ŋ	
Fricative	f	s			h
Oral	w	l	y		
Retroflexed		r			

Initial consonant clusters

pr	tr	kr
pl		kl
		kw
phr	thr	khkr
phl		khl
		khw

Final consonants

p	t	k	ʔ
m	n	ŋ	
w		y	

Chart 1. Consonant phonemes. A few other consonant clusters occur in borrowed words, as do a few additional final consonants in borrowed words for some speakers. (After Haas 1964, but my /y/ = Haas /j/.)

Vowels

	Front		Central		Back	
	Short	Long	Short	Long	Short	Long
High	i	ii	ɨ	ɨɨ	u	uu
Mid	e	ee	ə	əə	o	oo
Low	ɛ	ɛɛ	a	aa	ɔ	ɔɔ
Glided	ia		ɨa		ua	

Chart 2. Vowel phonemes. (After Haas 1964; my /ɨ/ = Haas /y/.)

Tones

After Noss (1964:6,18-20):

	High		Mid	Low	Falling	Rising
	Non-gl.	Gl.			Gl.	
Symbol	(~)	ˈ	unmarked	˘	ˆ	ˊ
On normal stress	(r)	rʔ	└	└	┐ʔ	┐
On loud stress	(r)	rʔ	┐	┐	┐	┐

NB: Gl. = "constricted" or glottalised. The non-glottalised high tone [˜] is not represented in the Thai writing system as a separate tone, and is not recognised by most linguists as being phonemically distinct (Udom 1968:172). On falling tone the glottalisation occurs on normal stress but not on loud stress.

After Abramson (1962:126-7):

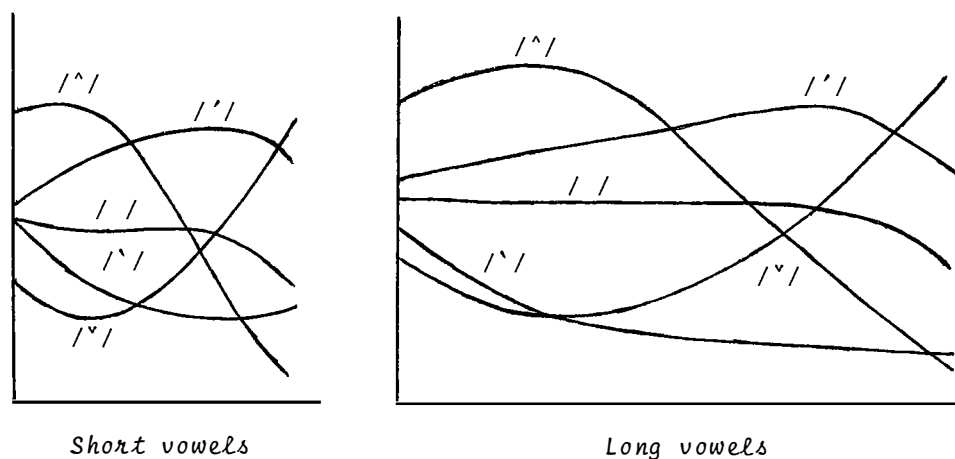


Chart 3. Tones

ก	k	MCC	บ	b	MCC
ข	kh	HCC	ป	p	MCC
ค	kh	LCC	ผ	ph	HCC
ฅ	kh	LCC	ฝ	f	HCC
จ	ŋ	LCC	พ	ph	LCC
ฉ	c	MCC	ฟ	f	LCC
ช	ch	HCC	ภ	ph	LCC
ฌ	ch	LCC	ม	m	LCC
ซ	s	LCC	ย	y	LCC
ฌ	ch	LCC	ร	r	LCC
ญ	y	LCC	ฤ*	r+	LCC
ฎ	d	MCC	ฌ*	r++	LCC
ฏ	t	MCC	ล	l	LCC
ฐ	th	HCC	ฌ*	l+	LCC
ฑ	th	LCC	ฌ*	l++	LCC
ฒ	th	LCC	ว	w	LCC
ณ	n	LCC	ศ	s	HCC
ด	d	MCC	ษ	s	HCC
ต	t	MCC	ส	s	HCC
ถ	th	HCC	ห	h	HCC
ท	th	LCC	ฬ	l	LCC
ธ	th	LCC	อ	?	MCC
น	n	LCC	ฮ	h	LCC

Chart 4. Consonant symbols in alphabetical order.
 Symbols marked with * are not shown on the consonant Charts 6 or 7 because of their rarity and their unusual characteristics, representing both consonant and vowel together.

๐	-o-		
๑	-ua-	๑	-ə(?)
๒	-๑๑(-), -๑(-)	๒	-e(?)
๓	-a(?)	๓	-aw
๔	-a-	๔	-๑(?)
๕	-ua	๕	-๑๑-, -๑-
๖	-aa(-)	๖	-ia(-)
๗	-am	๗	-ia(?)
๘	-i(-)	๘	-ia(-)
๙	-ii(-)	๙	-ia(?)
๑๐	-i(-)	๑๐	-๑๑(-), -๑(-)
๑๑, ๑๒	-i(-)	๑๑	-๑-
๑๓	-u(-)	๑๒	-๑(?)
๑๔	-uu(-)	๑๓	-๑๑(-)
๑๕	-๑๑(-), -๑(-)	๑๔	-๑(?)
๑๖	-๑-	๑๕	-ay
๑๗	-๑๑y, -๑y	๑๖	-ay
๑๘	-๑๑		

Chart 5. Vowel symbols in alphabetical order. Consonant symbols take precedence over vowel symbols. Symbols which sometimes stand for consonants and other times for vowels are alphabetised as consonants. There are other spellings for some vowels and combinations of vowels plus final consonants which are less frequent and/or less systematic.

Initial consonants

	p	t	c	k	ʔ
MCC	ป	ต	จ	ก	อ
	ph	th	ch	kh	
LCC	พ	ท	ช	ค	
HCC	ผ	ถ	ฉ	ช	
	b	d			
MCC	บ	ด			
	m	n		ŋ	
LCC	ม	น		ง	
HCC	หม	หน		หง	
	f	s			h
LCC	ฟ	ส			ฮ
HCC	ฝ	ล			ห
	w	l	y		
LCC	ว	ล	ย		
HCC	หว	หล	หย		
		(r)			
LCC		ร			
HCC		หร			

Final consonants

	p	t	k	ʔ
	ป	ต	ก	(๕ and other vowel spellings)
	m	n	ŋ	
	ม	น	ง	
	w		y	
	ว (and vowel spellings)		ย (and vowel spellings)	

Chart 6. Basic consonant symbols. These are the most frequent, the ones without which the Thai writing system could not operate. Non-basic ones are shown in Chart 7.

Initial consonants

	p	t	c	k	ʔ
MCC		ฏ			
	ph	th	ch	kh	
LCC		(ฐ)			
HCC	ภ	ธ (ฑ ฒ)	(ฌ)		
	b	d			
MCC		ฎ			
	m	n		ɲ	
LCC		ณ			
HCC		พณ			
	f	s			h
LCC					
HCC		ศ ษ			
	w	l	y		
LCC		ฬ	ญ		
HCC			หญ		
		(r)			
LCC					
HCC					

Final consonants

p	t	k	ʔ
	จ ต ศ ษ ล ฬ ฎ ฏ ฐ ฑ ฒ	ย ค ฌ	
	ย ฌ ฎ ฐ ฑ ฒ		
m	n	ɲ	
	ญ ณ ล ฬ ฑ ฒ		
w	y		

Chart 7. Non-basic consonant symbols. These are the symbols whose realisations are the same as the basic ones, but which are used to transliterate borrowed words.

	i	ii	ɨ	ɨɨ	u	uu
CV	๑	๑	๑	๑๑	๑	๑
CV?	๑	—	๑	—	๑	—
Other CVC	๑-	๑-	๑-	๑-	๑-	๑-
	e	ee	ə	əə	o	oo
CV	๑-๑	๑-	๑-๑	๑-๑	๑-	๑-
CV?	๑-๑	—	๑-๑	—	๑-๑	—
CVy	—	—	๑-๑	๑-๑	๑-๑	๑-๑
Other CVC	๑-๑	๑-	๑-๑	๑-๑	๑-๑	๑-๑
	ɛ	ɛɛ	a	aa	ɔ	ɔɔ
CV	๑-๑	๑-	๑-๑	๑-๑	๑-๑	๑-๑
Cv**	—	—	๑-๑	๑-๑	๑-๑	๑-๑
CV?	๑-๑	—	๑-๑	๑-๑	๑-๑	๑-๑
CVw	๑-๑	๑-๑	๑-๑	๑-๑	๑-๑	๑-๑
CVy	—	—	๑-๑	๑-๑	๑-๑	๑-๑
CVm	๑-๑	๑-๑	๑-๑	๑-๑	๑-๑	๑-๑
Other CVC	๑-๑	๑-	๑-๑	๑-๑	๑-๑	๑-๑
	ia		ɨa		ua	
CV	๑-๑		๑-๑		๑-๑	
CV?	๑-๑		๑-๑		๑-๑	
Other CVC	๑-๑		๑-๑		๑-๑	

Chart 8. Regular vowel symbols. When a Thai symbol is placed between the long and short vowel columns this indicates that the contrast is not represented in the writing system. Usually the longer form is the more frequent, at least in citation forms.

- indicates the position of consonant symbols.

— indicates that the combination does not occur.

* /o/ in syllable medial position has no symbol but is recognised by the absence of a symbol.

** Unstressed /a/ in the presyllable of a multisyllabic word may have no symbol.

	No tone diacritic	ˊ	ˋ	ˊ̃	ˊ̣
MCC					
CV(V)L	mid	ˋ	ˊ̃	ˊ̣	ˊ̣
CV(V)D	(ˋ)	—	ˊ̃	ˊ̣	ˊ̣
HCC					
CV(V)L	ˋ	ˋ	ˊ̃	—	—
CV(V)D	(ˋ)	—	ˊ̃	—	—
LCC					
CV(V)L	mid	ˊ̃	ˊ̣	—	—
CV(D)	(ˊ̣)	ˊ̃	—	—	—
CVVD	ˊ̃	—	ˊ̣	ˊ̣	—

Chart 9. Tone reading chart. Tone phonemes to be read with various combinations of syllable types, consonant class, and tone diacritic. L = "live" and D = "dead". For the way the system works see the discussion earlier in this Appendix. () enclosing a tone mark refers to the fact that in many contexts the distinctive tone is lost, becoming an undifferentiated tone approximately the same as mid tone.

Tone: Syllable Structure	Mid	Low	Falling	High	Rising
CV(V)L	M L	ˊ̣ H/ˊ̣L	ˊ̣ H/ˊ̣L L	ˊ̣ L	ˊ̣ H/ˊ̣L
CVVD		M H/ˊ̣L	ˊ̣ H/ˊ̣L L	ˊ̣ L/ˊ̣	ˊ̣ M
CV(D)	(M) (H) (L)	M H/ˊ̣L	ˊ̣ H L	ˊ̣ L	ˊ̣ M

Chart 10. Tone writing chart. Consonant class and tone diacritic to be selected for various tones in relation to syllable structure. Items in () are for neutralised unstressed syllables.

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